Field Day: Leveraging Microbiomes in Agriculture

AG2PI
Agricultural Genome to Phenome Initiative

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

The Challenges of Putting Microbes to Work for Human Benefit

Using our Genesis Platform, AgBiome discovers microbes and genes that solve important agricultural problems. This presentation will discuss our platform and some of the challenges associated with microbial isolation and the effective use of thousands of genomes.

Presenter:

Ben Holt is a member of the Scientific Leadership at AgBiome, Inc. (RTP, North Carolina), which partners with microbes to Feed the World, Responsibly. He leads the Core Technology Platform and Discovery Program, including AgBiome's microbial and genomics research platforms. Prior to joining AgBiome, he was a professor of plant biology at the University of Oklahoma and a program officer at the National Science Foundation, where he led the Plant, Fungal, and Microbial Development Program.

Inter-Kingdom Communication in the Gut Bacteriome and Mycobiome of the Weanling Pig

The environmental changes and stress associated with the weaning transition in piglets can lead to poor growth performance and a predisposition to disease. Interactions between the gut bacteriome and mycobiome can alter host nutrition, development, and disease response, but these interactions remain poorly understood in swine. While the gut bacteriome displays a predictable pattern of colonization with increased diversity over time, the fungal populations are more effected by environmental effects such as feed. Our data confirmed sequence-based cross-kingdom inferred interactions through in vitro biofilm assays demonstrating the ability of gut bacteria to alter gut fungal behavior and biofilms. This data provides insights into microbial interactions in the piglet fecal ecosystem during weaning that can modify piglet performance.

Presenter:

Dr. Katie Lynn Summers is a research microbiologist at the USDA in the Animal Biosciences and Biotechnology Laboratory (ABBL) in Beltsville, MD. She specializes in understanding the role of the microbiome and antibiotic alternatives in piglet growth during the critical weaning transition.

Dec. 15, 2021

10:30 AM–12:00 PM

(Central Time, –6 GMT)

Purpose: An exploration of how microbial research is being used to inform agricultural decisions and improve crops and livestock.

Register for this Zoom virtual meeting:

https://tinyurl.com/AG2PI-FD14

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

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