Managing Manure to Mitigate Antibiotic Resistance

November 15, 2019

2:30 pm (eastern), 1:30 pm (central), 12:30 pm (mountain), 11:30 am (pacific)

The use of antibiotics in livestock production has been the subject of significant scrutiny in recent years as the emergence and proliferation of antimicrobial resistant organisms fuels worldwide concern about this critical, modern day health crisis. The ability of organisms to evolve and develop resistance to antimicrobials is a natural phenomenon, and one that has been demonstrated to have existed long before humans inhabited the planet. But, does this mean that human activities – and, particularly, those associated with animal agriculture are faultless? Research into the link between antibiotics in livestock and increased risk for resistant infection in the human population may be inconclusive, but the potential for resistance transfer to humans through the food supply or environmental contamination remains. Moreover, resistance mechanisms in animal settings may have significant animal health and environmental implications. For these reasons, producers are increasingly interested in identifying management practices that can reduce the presence of antibiotics and resistant organisms in animal production systems. This webinar will highlight some of the work being done to identify effective practices for reducing concentrations of resistant bacteria and resistance genes at critical control points in beef feedlot and dairy manure management systems. Participants will also learn about a new nationwide outreach team working collaboratively to improve the abilities of agricultural producers and the general public to understand, assess and adopt practices that mitigate potential risks from food-borne AMR. *An application for continuing education credit for Certified Crop Advisors (CCAs) and members of the American Registry of Professional Animal Scientists (ARPAS) will be submitted.*

How Do I Participate?

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For More Information

Antibiotic use in livestock animals
- Nebraska Extension publication on environmental concerns for antibiotic use in animal production: http://extensionpublications.unl.edu/assets/pdf/rp196.pdf

Antibiotics in dairy FAQs from Cornell
- What is AMR, FAQs: https://enst.umd.edu/sites/enst.umd.edu/files/filefield_paths/Antibiotic%20Resistance%20Farmer%20Q%26A.pdf

The *iAMResponsible™ Project*
- Project introduction: https://water.unl.edu/article/animal-manure-management/iamresponsible-nationwide-antimicrobial-resistance-amr-education

This webinar is brought to you by the LPE Learning Community and the S1074 Multistate Project *Future Challenges in Animal Production Systems: Seeking Solutions through Focused Facilitation*.

The LPE Learning Community is a project dedicated to the vision that individuals involved in public policy issues, animal production, and delivery of technical services for confined animal systems should have on-demand access to the nation's best science-based resources. See our website at: lpelc.org.

About The Presenters

Dr. Xu Li is an associate professor in the Department of Civil and Environmental Engineering at UNL. He received his Ph.D. in Environmental Engineering from the University of Michigan. His research aims to understand the fate and transport of antimicrobial resistant bacteria (ARB) and antimicrobial resistance genes (ARGs) in the environment and to develop best practices to mitigate ARB and ARGs in livestock waste management systems. Email: xuli@unl.edu

Carlton Poindexter is a doctoral student in the Department of Environmental Science and Technology at the University of Maryland. His research is generally focused on the various uses and implementation of anaerobic digestion as a valuable waste treatment technology and energy producer. His current focus is on antimicrobial resistance and thermal based waste/wastewater management technology. He is interested in the effect of various manure waste thermal treatments on antibiotic degradation and their corresponding influence on antibiotic resistance genes (ARG) abundance and antibiotic resistant bacteria (ARB) composition. His research seeks to determine the ecological mechanisms involved in the occurrence and transmission of ARB and ARB. Email: cpoindex@terpmail.umd.edu

Dr. Amy Schmidt is an Associate Professor in Biological Systems Engineering and Animal Science at the University of Nebraska – Lincoln and director of the *iAMResponsible™* Project, a national outreach effort focused on antimicrobial resistance. Having grown up in rural Iowa, she appreciates the agricultural production systems that feed people worldwide and chose her career path to support responsible livestock production by helping farmers adopt research-based practices that optimize agronomic productivity and minimize potential environmental and social risks. Email: aschmidt@unl.edu

Mara Zelt is a graduate student at the University of Nebraska – Lincoln. Her research at Nebraska has focused on evaluating beef cattle and manure management strategies for their impact on antibiotic resistance. Mara is also very passionate about improving scientific communication and outreach as part of Nebraska Extension, and especially through her work with the iAMResponsibleTM Project. Mara will serve as the moderator for this webinar. Email: mzelt2@unl.edu

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