Intersections of Environmental Management and Biosecurity in Animal Agriculture

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Images credit: Kansas Pork Association and National Hog Farmer

Definitions

- **Pathogen**: disease causing microorganism
- **Biosecurity**: procedures to protect humans or animals against pathogens
- **Vector**: organism that carries a pathogen to its host
- **Fomite**: nonliving object capable of carrying pathogens

Images credit: CDC via Wikipedia

Strong Links

- **Manure nutrient management plans (NMPs)** also describe practices that may prevent spread of pathogens or toxins from:
  - Manure
  - Mortalities
  - Spoiled feed
  - Other organic waste

Images credit: ESRI
Strong Links

• Sound environmental management and biosecurity promote:
  • Public health
  • Food and companion animal health
  • Wildlife health
  • Protect farm, ranch, and industry from legal and financial risks

Strong Links

• PEDv and manure management
  • Manure pits and storage
  • Land-applied manure
  • Equipment
  • Tip: see Minnesota Vet Med and Extension Resources

Strong Links

• Composting HPAI mortalities 2015
  • Pathogen reduction method (heat)
  • Waste transformation and reduction
  • Eventual safe agronomic use (land application)
Strong Links

* Pathogens making the rounds… vectors and fomites
  • Technical service providers
  • Manure service providers
  • Shared tools and equipment
  • Delivery of inputs/supplies
  • Harvest or export of products

Image credit: Smithfield Foods

Strong Links

* Producer risk perception and risk tolerance may similarly influence decision making about:
  • Environmental best practices
  • *Biosecurity best practices*

* All movement of goods and services through a system can spread disease.

USDA-AFRI CAP

* “A human behavioral approach to reducing the impact of livestock pest or disease incursions of socio-economic importance.”*
  • PI: Julie Smith DVM, PhD, University of Vermont
  • Co-PIs and subcontracts: national in scope
  • *Introducing SEGS Lab (UVM)*
  • guest speakers…

Image credit: SEGS Lab