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Where's the Poop? Environmental Challenges for Large and Small Animal Feeding Operations

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Heartland Regional Regional Water Coordination Initiative Conference

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Online at: http://www.oznet.ksu.edu/waterquality/Reg_Conf/presentations.htm
Where’s the Poop? Environmental Challenges for Large and Small Animal Feeding Operations

Rick Koelsch, University of Nebraska and John Lawrence, Iowa State University
Where’s the Poop?

• Small AFO
  – Under 1000 AU
  – Below the NPDES permit size unless designated or direct contact or man-made discharge to water of US
  – May require state permit

• CAFO
  – 1000 or more AU
  – Required to have NPDES permit
Where’s the Poop?
AFO or CAFO

• Which size has the more operations?
• Which size has more animals/poop?
• Which size has more recoverable nutrients?
• Which size has more acres available for manure?
Where’s the Poop?
AFO or CAFO

• Who are your clients?
• What are their challenges?
• How do you reach them?
• Where is the greatest environmental risk?
• Where can you have the greatest impact?
Status and Trends in Small and Mid-Sized Animal Operations in the U.S.

Noel Gollehon
Economic Research Service, USDA
Presentation at the Workshop on Small and Mid-Sized Animal Operations and Water Quality
May 2, 2005
Linthicum Heights, Maryland
Numbers of farms, animals, & nutrients

Animal Farms

Number of Operations

- 1982
- 1987
- 1992
- 1997

Source: Kellogg, et al., 2000
Numbers of farms, animals, & nutrients

Source: Kellogg, et al., 2000
Non-confined animals: Farms and AU

Source: Kellogg, et al., 2000
Confined animals: Farms and AU

Source: Gollehon, et al., 2001
Confined animals: Manure nutrients

Recoverable Nitrogen

Recoverable Phosphorus

Source: Gollehon, et al., 2001
Confined animals: Farms with excess manure

Farms with Excess Nitrogen

- LT 50
- 50-300
- 300-1000
- GT1000

Farms with NO Excess N
- Farms w Excess N

Source: Gollehon, et al., 2001

Farms with Excess Phosphorus

- LT 50
- 50-300
- 300-1000
- GT1000

Farms w NO Excess P
- Farms w Excess P

Source: Gollehon, et al., 2001
AFO Challenges

• More than half of recoverable nutrients
• 98% of animal operations
  – Over 700,000 farms
  – 150,000 farms 300-1000 AU
• Largely under the radar
• Balancing carrots and sticks
  – Few sticks if unregulated
  – Cost-share carrots are costly to implement and discourage of some producers
AFO Take-home Points

• Nutrient planning essential
  – AFO’s with enough land need better utilization
  – AFO’s with excess nutrients need to plan beyond the farm borders

• Educational programs important
  – Too many to regulate
  – Technical assistance programs costly
Bang-for-the-Buck Programming

• Results in water quality improvement
• Not so detail as to discourage adoption
• The producer understands:
  – Greatest water quality risk factors
  – Nutrient value of manure
  – BMPs and simple strategies to address both
Are you going to lead or defend?