Animal Waste Management Systems and Poultry Heavy Use Area Concrete Pads

Phase 6 Panel

Shawn Hawkins

Proposed Panel Chair

Animal Waste Management Systems

- Practices designed for proper handling, storage that increase utilization of animal waste nutrients for crop production
- Special emphasis: Poultry Heavy Use Area Concrete Pads

Current Watershed Model

- Applies baseline environmental load specific for liquid and solid animal wastes
- AWMS effectiveness values are applied to reduce baseline loads from animal operations
- Poultry Heavy Use Area Concrete Pads are not included in the current model

Panel Scope of Work

- Review, justify, and recommend AWMS effectiveness values
- Define and provide effectiveness estimate for Poultry Heavy Use Area Concrete Pads
- Table 11-5 of NRCS AWMFH

AWMFH Table 11-5

Table 11–5 Percent of original nutrient content of manure retained by various management systems

Management system	Beef			Dairy			Poultry			Swine		
	N	P	K	N	P	K	N	P	K	N	P	K
	Percent											
Manure stored in open lot, cool, humid region	55–70	70–85	55–70	70–85	85–95	85–95				55–70	65–80	55–70
Manure stored in open lot, hot, arid region	40–60	70–80	55–70	55–70	85–95	85–95						
Manure liquids and solids stored in a covered, essentially watertight structure	70–85	85–95	85–95	70–85	85–95	85–95				75–85	85–95	85–95
Manure liquids and solids stored in an uncovered, essentially watertight structure	60–75	80–90	80–90	65–75	80–90	80–90				70–75	80–90	80–90
Manure liquids and solids (diluted less than 50%) held in waste storage pond				65–80	80-95	80-95						
Manure and bedding held in roofed storage				65–80	80–95	80–95	55–70	80–95	80–95			
Manure and bedding held in unroofed storage, leachate lost	55–75	75–85	75–85									
Manure stored in pits beneath slatted floor	70–85	85–95	85–95	70–85	90–95	90–95	80–90	90–95	90–95	70–85	90–95	90–95
Manure treated in anaerobic lagoon or stored in waste storage pond after being diluted more than 50%	20–35	35–50	50–65	20–35	35–50	50–65	20–30	35–50	50–60	20–30	35–50	50–60

Panel Membership Guidelines

- 8 members total, including 2 non-voting: Watershed Technical Workgroup and Chesapeake Bay Program modeling team reps
- Expertise required:
  - Biological/biosystems engineering
  - NRCS representative with AWMS expertise
  - Knowledge of AWMS – dairy and poultry practices required; swine, beef, equine optional
  - Knowledge of relevant NRCS Conservation Standards

Dr. Mark Risse

- Director Georgia Sea Grant College, Marine Extension, U Georgia (UGA)
- Georgia Power Endowed Professor of Water Resources Policy
- Poultry and Livestock Environmental Learning Center
- 18 years experience coordinating animal waste management activities, UGA
- Professional Engineer: Poultry, Dairy, Swine

Dr. Douglas Hamilton

- Associate Professor, Biosystems and Agricultural Engineering and Extension Waste Management Specialist, Oklahoma State U
- Panel Chair, Manure Treatment Technology BMP Expert Panel
- 20 years experience coordinating animal waste management activities as an Extension Specialist
- Professional Engineer: Poultry, Swine, Dairy

Peter Vanderstappen

- Assistant State Engineer, USDA NRCS Pennsylvania
- Professional Engineer: Statewide responsibility for conservation manure storage construction
- 31 years experience designing dozens of animal waste storage facilities in PA
- Professional Engineer: Dairy, Poultry

Dr. Jonathan Moyle

- Poultry Specialist, Agriculture and Natural Resources, U Maryland Extension, Lower Eastern Shore Research and Education Center
- Performed study quantifying litter recovery using Poultry Heavy Use Area Concrete Pads
- Interacts daily with both the poultry companies and growers
- Poultry Scientist: comprehensive knowledge of all aspects of poultry production in CBW

Bill Brown

- State Poultry Extension Agent, University of Delaware Extension
- Poultry producer, comprehensive knowledge of current poultry waste BMPs in CBW
- Extension educator providing programing for mortality and litter management BMPs, nutrient management, daily interactions with poultry producers and integrators

Dr. Shawn Hawkins

- Associate Professor, Biosystems Engineering and Soil Science, Animal Waste Management Specialist, U Tennessee
- Nonpoint Source Water Quality Modeling Expert, Tennessee Nutrient Reduction Strategy
- 9 years experience coordinating animal waste management education; provided dozens of waste management systems designs
- Professional Engineer: Poultry, Dairy, Swine

Summary

- Proposed members:
  - Shawn Hawkins, U. of Tennessee (Chair)
  - Jonathan Moyle, UMD Extension
  - Bill Brown, U. of Delaware Extension
  - Peter Vanderstappen, PA NRCS
  - Doug Hamilton, OK State
  - Mark Risse, UGA

Summary

- Letters of commitment, COI forms, and resumes and CVs have been assembled for all but one panel member
- Timeline/Roadmap?
- Questions?