

Recommendations for Livestock and Poultry Mortality Management

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Animal Mortality Management Expert Panel Establishment Group

Background

- ▶ In the CBP Phase 6.0 Model, animal mortality and associated mortality management practices are not fully represented for crediting purposes.
- ▶ The only existing partnership-approved BMPs associated with mortality management is termed “mortality composting” and is defined as: “A physical structure and process for disposing of any type of dead animals. Composted material is land applied using nutrient management plan recommendations. Enter units of the percent of dead animals composted, animal count, animal units, or number of systems.”
- ▶ Efficiency values for nitrogen (N) and phosphorus (P) are not currently represented in the model for the mortality composting BMP.

Background

- ▶ The AgWG has requested a review of mortality management practices currently in use in the Phase 6.0 Model.
- ▶ This is in response to increased implementation of mortality composting systems and other alternative management processes for routine mortality management on agricultural operations.
- ▶ The review is also intended to address the current deficiency of available information in the Phase 6.0 Model that would allow for planning or crediting animal mortality management practices towards TMDL goals.

Workgroup

- ▶ The Animal Mortality Management Expert Panel Establishment Group (EPEG) was formed to:
 - ▶ Determine the necessity for a Phase 6.0 Animal Mortality Management Expert Panel (EP).
 - ▶ Identify priority tasks for the Phase 6.0 Animal Mortality Management EP,
 - ▶ Recommend areas of expertise that should be included on the Animal Mortality Management EP, and
 - ▶ Draft the Animal Mortality Management EP's charge for the review process.
- ▶ From November 8, 2017 through January 19th, 2018 the EPEG met two times by conference call and worked collaboratively to complete this charge.

EPEG Workgroup

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- ▶ Frank Schneider PA State Conservation Commission
- ▶ Chris Brosch Delaware Department of Agriculture
- ▶ Shelly Dehoff PA Agricultural Ombudsman Program
- ▶ Gary Felton University of Maryland
- ▶ George Malone Malone Poultry Consulting
- ▶ John Moyle University of Maryland Extension
- ▶ Loretta Collins University of Maryland
- ▶ Mark Dubin University of Maryland
- ▶ Lindsey Gordon Chesapeake Research Consortium
- ▶ Jeremy Hanson Virginia Tech

Glossary of Terms

- ▶ Nothing earth shattering but does break down the current different methods that are used for mortality disposal

Method

- ▶ The EPEG developed its recommendations in accordance with the process specified by the AgWG in 2014.
- ▶ The collective knowledge and expertise of EPEG members formed the basis for the recommendations.
- ▶ Several of the EPEG members have had experience on BMP expert panels or subcommittees. EPEG members also have knowledge and/or expertise in state and federal programs, the Chesapeake Bay model, and livestock and poultry mortality management practices within the Chesapeake Bay watershed.

Recommendations for Expert Panel Member Expertise

- ▶ The EPEG recommends that the AgWG establish an Expert Panel to evaluate routine animal mortality and associated mortality management practices currently being implemented in the Chesapeake Bay watershed by livestock and poultry operations, and develop a recommendation report of its findings following standard CBP partnership protocols.
- ▶ The AgWG expert panel organization process directs that each expert panel is to include eight members, including one non-voting representative each from the Watershed Technical Workgroup (WTWG) and Chesapeake Bay Program modeling team. Panels are also expected to include three recognized topic experts and three individuals with expertise in environmental and water quality-related issues. A representative of USDA who is familiar with the USDA NRCS conservation practice standards should be included as one of the six individuals who have topic or other expertise.
- ▶ Panel members should not represent entities with potential conflicts of interest

Recommendations for Expert Panel Member Expertise

- ▶ The EPEG recommends that the Phase 6.0 Animal Mortality Management EP should include members with the following areas of expertise:
 - ▶ Expertise in design/engineering/implementation of mortality management systems.
 - ▶ Experience with carrying out scientific research projects relating to mortality management.
 - ▶ Expertise in fate and transport of N and P from farmsteads.
 - ▶ Knowledge of effectiveness of livestock and poultry mortality management practices implemented in the Bay jurisdiction(s).
 - ▶ Knowledge of how BMPs are tracked and reported, and the Chesapeake Bay Program partnership's modeling tools.
 - ▶ Experience with verification of livestock and poultry mortality management practices used at farmsteads.
 - ▶ Knowledge of and experience with relevant USDA-NRCS conservation practice standards and codes.

Expert Panel Scope of Work

- ▶ The general scope of work for the EP will be to define and configure the Animal Mortality Management BMPs in the Phase 6 model.
- ▶ Specifically, EPEG recommends the following charge with associated tasks for the Phase 6.0 Livestock and Poultry Mortality Management EP:
 - ▶ 1. Determine scope of the EP based on available data and impact on water quality
 - ▶ 2. Define load reduction efficiencies for N and P of selected practices for agricultural feeding space areas.
 - ▶ Consider fate of N and P across selected practices
 - ▶ Decomposition and mineralization
 - ▶ Leachate
 - ▶ Volatilization
 - ▶ Field application
 - ▶ Removal from agricultural system

Expert Panel Scope of Work

- ▶ 3. Determine how the selected mortality management practices can be represented in the model.
 - ▶ Consider the information necessary to address Options 1 and 2 (Figure 1)
 - ▶ Option 1: applicable to 2020-2021 milestone planning
 - ▶ Option 2: applicable to post-Phase 6.0 Watershed Model
- ▶ 4. Consider incorporating relevant USDA NRCS conservation practice standards and codes and other established practices in recommending BMPs for livestock and poultry mortality management practices, e.g., NRCS Conservation Practice Standard 316 (Animal Mortality Facility).

Data Needed for Animal Mortality Management Representation in the Phase 6.0 Watershed Model

General Animal Group (defined by EPEG)	BMP Animal Groups	% N per Carcass	% P per Carcass	Mortality %	Avg. Dead weight?	Mortality Management Baseline (1984)	Mortality Management Today**		
Primary Animal Group	Poultry	?	?	?	?	Burial	Burial	Yes	
							Freezer	Yes	
							Compost	Yes	
							Incineration	Yes	
	Swine	?	?	?	?	Burial	Burial	Yes	
							Freezer	Yes [#]	
							Compost	Yes	
							Incineration	Yes	
Secondary Animal Group	Cattle	?	?	?	?	Burial	Burial	Yes	
							Freezer	No	
							Compost	Yes	
							Incineration	No	
	Equine*	?	?	?	?	?	Burial	Burial	Yes
								Freezer	No
								Compost	Yes
								Incineration	No
	Other? (e.g. Sheep, Goats)	?	?	?	?	?	Burial	Burial	Yes
								Freezer	No
								Compost	Yes
								Incineration	No

Potential Crediting Mechanisms

Potential Credit Mechanisms:

Option 1: If an EP finds a water quality benefit, that benefit could be added as a % reduction to feed space loads in a future milestone period.

Option 2: Ag Workgroup could request a change to the manure calculations from the Water Quality GIT and Modeling Workgroup in a future milestone period if an EP defines:

- % mortality
- nutrients available in carcasses
- water quality benefit

Timeline and Deliverables

- ▶ The EP project timeline for the development of the panel recommendations is based on reasonable expectations informed by previous CBP BMP Expert Panels.
 - ▶ **Spring 2018** - EPEG recommendations approved by AgWG; Virginia Tech issues Request for Proposals (RFP) to solicit panel membership
 - ▶ **Summer 2018** - Virginia Tech selects proposal and shares proposed panel membership with CBP partnership for feedback; final proposed panel membership brought to AgWG for approval
 - ▶ **Fall 2018** - Panel hosts open stakeholder session and face-to-face meeting
 - ▶ **Summer 2019** - Target date for panel to release full recommendations and final report for approval by the AgWG, WTWG, and WQGIT. This process is expected to take three to six months.
 - ▶ **Summer/Fall 2019** - If approved by the partnership, panel recommendations are final and will be represented in the Phase 6.0 modeling tools in 2019 as part of the model updates.

Phase 6.0 BMP Verification Recommendations

- ▶ The EP will utilize the Partnership approved *Agricultural BMP Verification Guidance4*, as the basis for developing BMP verification guidance recommendations.
- ▶ The EP verification guidance will provide relevant supplemental details and specific examples to provide the Partnership with recommended potential options for how jurisdictions and partners can verify livestock and poultry mortality management practices in accordance with the Partnership's approved guidance.

Comments / Questions

- ▶ The AgWG will have a month to review and submit questions/comments.
- ▶ EPEG would look for approval at March AgWG conference call.