Recommendations to Estimate Swine Nutrient Production in the Phase 6 Watershed Model

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Project Team

Data collection

- *Tim Sexton* – VA DCR, Division of Soil and Water Conservation
- *Bobby Long* - VA DCR, Division of Soil and Water Conservation
- *Jordan Kristoff* – Virginia Tech intern with VA DCR, Division of Soil and Water Conservation

Report

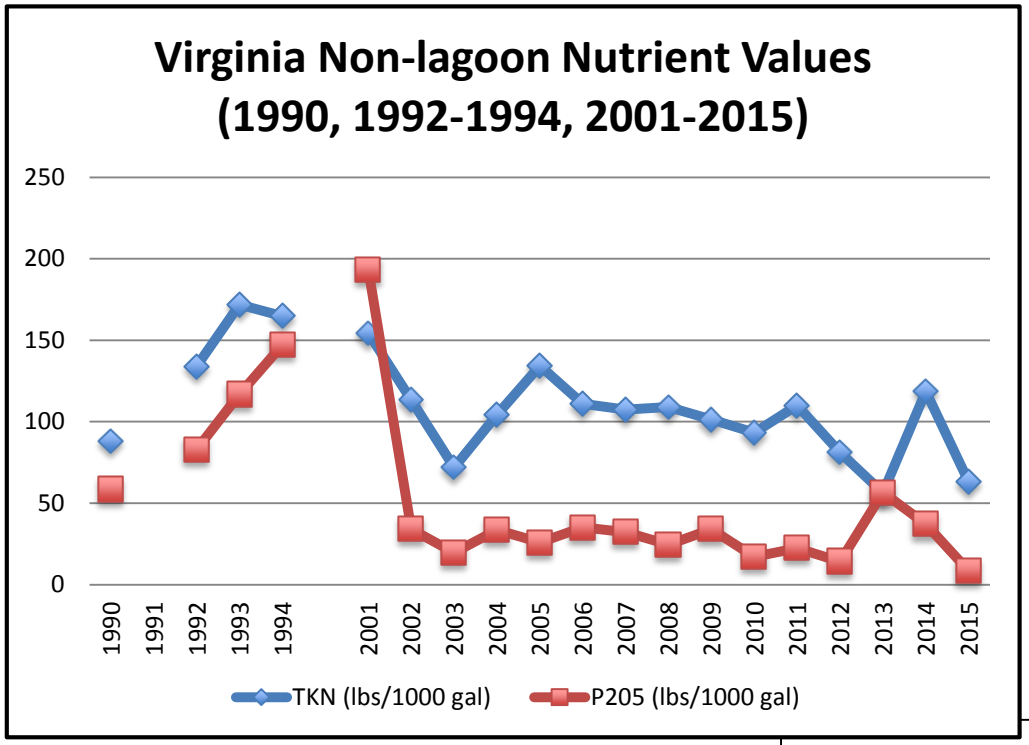
- *Robb Meinen* –Penn State Department of Animal Science
- *Mark Estienne* - Virginia Tech Department of Animal and Poultry Sciences
- *Tim Sexton* – VA DCR, Division of Soil and Water Conservation

Phases of Production – Average Weights

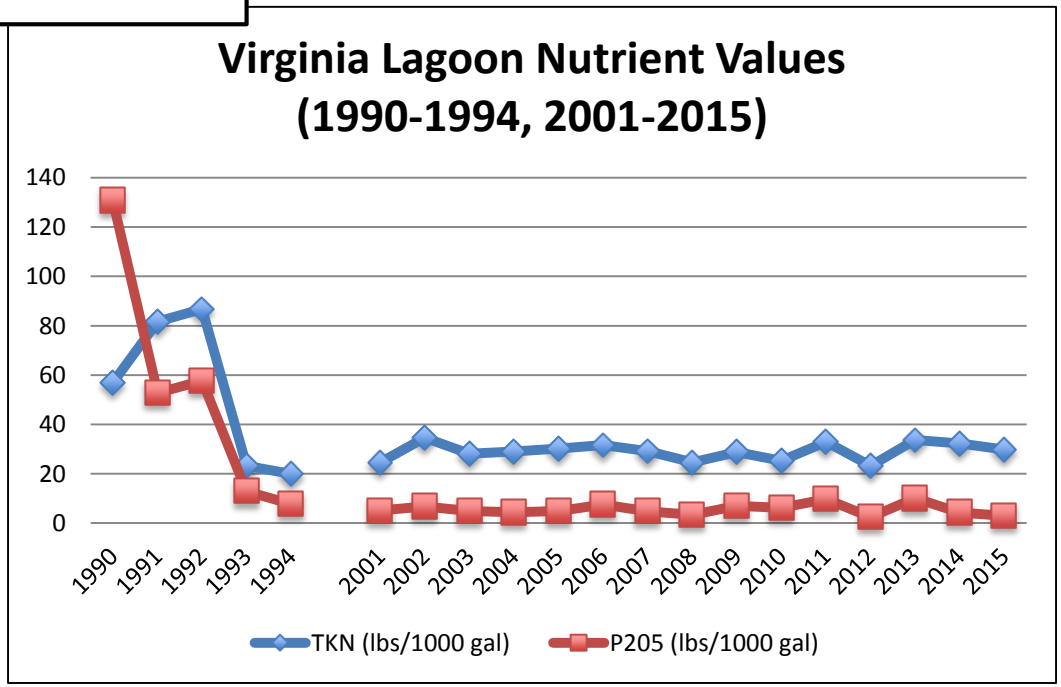
Phase of Production	Average Animal Weight (lbs)	Typical Weight Range (lbs)
Sows (includes gilts and boars)	450	400-500
Nursery	34.99	13.30 - 56.68
Finisher	163.85	56.68 - 272.74

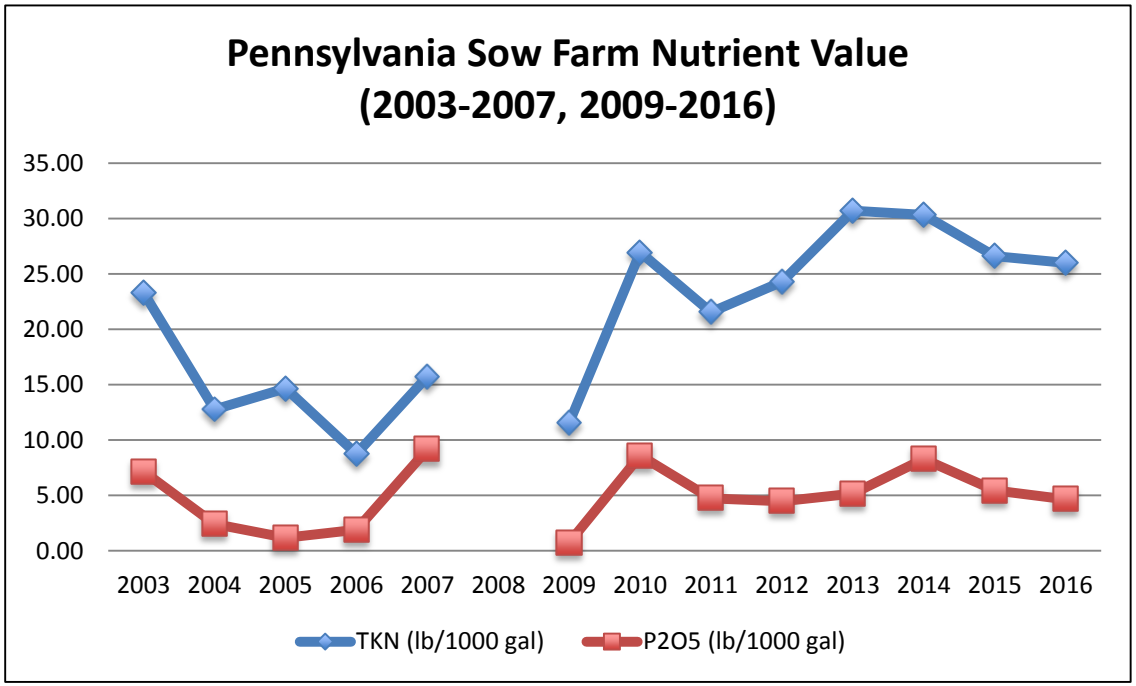
Manure Nutrient Content

Manure Storage Type	TKN (lbs/1000 gal)	P2O5 (lbs/1000 gal)	K2O (lbs/1000 gal)
Sow with Outdoor or Under-floor Storage (non-lagoon)	29.80	12.13	17.82
Nursery	14.34	18.72	8.85
Finisher	26.22	20.65	27.93
Growing Pig Lagoon Primary Storage (2.4% solids)	2.72	7.52	5.72
Growing Pig Lagoon Secondary Storage (0.19% solids)	0.43	1.71	0.57

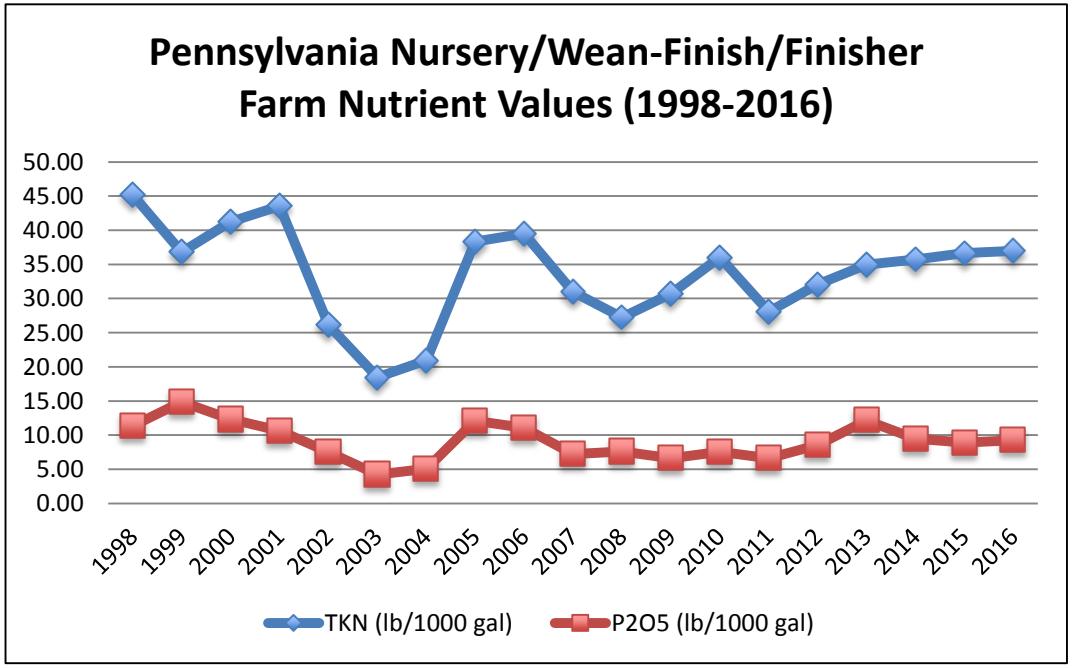


Graphs of Historic VA swine data





Graphs of Historic PA swine data



Response to Public Comments

- Only 1 comment document was received
  - Combined PA SCC & DEP

- *Comments are paraphrased in the following slides and are not in the order received. Some repetitive comments are combined into a single item here (although addressed individually in report Response section).*

Response to Public Comments

Comment: How many swine integrators exist in various watershed states?

Response: *This is not known by the project team.*

Comment: Was same manure sampling protocol used for all areas?

Response: *Yes. Brief SOP details provided in report.*

Comment: Expression of concern with a short paragraph that discussed nutrient balance generalities between sow and growing hog operations.

Response: *Panel agreed. Paragraph was stricken.*

Response to Public Comments

Comment: Provided clarification on use of second stage lagoon liquids for flushing/re-charging/irrigating.

Response: *Report text was modified for clarification and explanation was provided in Response section.*

Comment: Clarification on how we categorized sow manure systems.

Response: *Report text was modified for clarification and explanation was provided in Response section.*

Response to Public Comments

Comment: Clarification on why some manure values differ within the same swine category (because of storage differences).

Response: *Report text was modified for clarification, and explanation was provided in Response section.*

Comment: Clarification on decimal places used.

Response: *Explanation was provided in Response section.*

Response to Public Comments

Comment: *Why not accept manure samples older than 14 months old?*

Response: *Team felt that older samples may not be representative of current practices.*

Comment: *How common are wean-to-finish farms in different state and among integrators?*

Response: *Team included this category, even though we had only low numbers of samples, because these farms do exist. The distribution of this farm category is not known because our integrator and sample size were small.*

Response to Public Comments

Comment: *Is there a reason for including both primary and secondary lagoon stage data?*

Response: *Team responded that this is important for farms in the southern regions of the watershed because manures from both of these systems need description.*

Response to Public Comments

Comment: *Concerns with small study group.*

Response: *Team acknowledges small sample size issues and suggests further quantification and characterization in the report. Time constraints for this initial report meant that a smaller, more detailed data sets were probably better than a larger set that we did not have control over.*

Future data collection should expand to further integrators/production systems.

Response to Public Comments

Comment: *Is split-sex feeding normal?*

Response: *Many VA farms feed this way, most PA farms do not. Responded that consideration for both systems is appropriate in the future.*

Comment: *Is phytase used in all Bay states?*

Response: *Yes, phytase it is universally used in commercial bulk swine rations.*

The panel seeks report approval.

Questions?

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