

Pennsylvania Inter-Agency Nutrient Management Annual Conference

# **TECHNICAL MANUAL VERSION 10 UPDATE**

Frank Schneider • Nutrient Management Program Director • 717-705-3895 • [fschneider@pa.gov](mailto:fschneider@pa.gov)

Jerry Martin • Senior Extension Associate • 717-394-6851 • [jmartin@psu.edu](mailto:jmartin@psu.edu)

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Penn State **Extension**

# Version 10 Update Background

- The current version (Version 9.0) of the Tech Manual was released in October 2015
- SCC conducted an open comment period in August 2016
  - For NM specialists to submit comments and suggestions for revisions
- SCC received a total of 66 comments and suggestions
- SCC staff reviewed the comments and suggestions
  - 38 of the comments and suggestions were deemed to have merit
- This presentation will review the significant updates
  - Some were simple, such as updating a weblink

# Creation of User Guides

- Standalone NMP and NBS User Guides
  - Developed to assist in completing Nutrient Management Plans and Nutrient Balance Sheets
  - Both Excel and Word guides
- “How to complete” content in the NM Tech Manual was removed
- The User Guides will be posted on the NM website
  - Will be update as needed

# CAFO Bulletin Notices

## **NMP Submission: Required Appendices and Supplemental Information**

- The Concentrated Animal Feeding Operation (CAFO) bulletin notice guidance was updated per legal advice.
- Major changes include having to re-advertise NMPs in the Pa Bulletin when:
  - Significant changes have been made during the plan review process
  - A NMP is withdrawn from the review process and then resubmitted

# Identification of CAO Calculation

## Section I: Identification of CAOs

- Clarification was added that manure application setbacks and buffer areas are to be included in the acreage for the CAO calculation.
- The specific guidance reads:
  - “Those areas that may not have mechanical manure application due to manure application setbacks, are included in the acres available calculation. The entire mapped CMU acres for cropland, hayland, or pastureland should be included.”

# CAFO Site Name

## Cover Page

- The Concentrated Animal Feeding Operation (CAFO) Site Name has been added to the Nutrient Management Plan cover page.
- The updated guidance reads:
  - “If the operation is a CAFO and the CAFO operation has a name, that CAFO name should be included here.”

# Custom Applicators and Rented Equipment

## Appendix 2: Operation Information & NMP Summary

- When the plan indicates that a custom applicator is used or that manure application equipment is rented the NMP should list:
  - Custom applicator's name and Act 49 license number
  - Rented equipment is calibrated and calibration records be maintained with the manure application records

# Number of Days

## Appendix 3: Manure Group Information

- Guidance was added to clarify the number of days used included in the NMP
- The added guidance states:
  - “It is acceptable to use 30 days per month rather than adding the exact days for each month in the manure group collection period. The exception to this guidance is operations with an AEU/Acre total very close to 2.00 AEU/Acre. In those cases, the exact days for each month should be used.”



# Atypical Manure

## Appendix 4: Crop & Manure Management Information

- Guidance was added to Appendix 4 that provides a definition and a list of common types of atypical manure
- The guidance states:
  - “Atypical manure is defined as the end product of any manure treatment process in which the typical ratio of ammonium and organic nitrogen is altered and thereby influencing the nitrogen availability when this manure end product is land applied for crop production. The nitrogen availability for atypical manure in Act 38 nutrient management plans must be determined by utilizing the “N Fractions Method” using the Penn State Agronomy Guide Table 1.2-15...”

# Atypical Manure

## Appendix 4: Crop & Manure Management Information

- “...Below is a partial list of several types of manure treatment processes that result in atypical manure types that require the “N Fractions Method” of nitrogen availability determination.”
  - **Mechanically Separated Manure** – The end products of manure that is run through equipment that separates or removes the solids from the liquids.
  - **Manure Separated by Settling** – The end products of manure that is run through a treatment system using a series of settling tanks or ponds in order to separate the solids from the liquids.
  - **Unagitated Liquid Manure** – The liquid and solid portions of manure (layers created by the settling of solids in a liquid storage) that are land applied without the manure being sufficiently agitated to create a homogenous product.
  - **Composted Manure** – Manure that is actively composted by adding the appropriate amount of a carbon source, routinely turning or mixing and monitoring temperature.
  - **Mortality Compost** – Livestock and poultry mortality that is actively composted by adding the appropriate amount of a carbon source, turning or mixing and monitoring temperature.
  - **Biogas Manure** – Manure that has gone through the digestion process for methane gas production.
  - **Manure Treated with Additives** – Manure in a liquid or semisolid manure storage that has been treated with an additive.”

# Planned Rates Over 9000 Gallons

## Appendix 4: Crop & Manure Management Information

- Guidance was provided to clarify how manure application rates over 9,000 gallons per acre can be handled in the NMP and what guidance must be provided to the operator.
- Planned rates over 9000 gallons per acre can be handled two ways in the nutrient management plan:
  - Entered as multiple applications in Appendix 4 of the NMP Spreadsheet.
    - Each of the separate applications must be calibrated rates and have the same season of application.
    - A note must be included in the NMP Summary Notes requiring that adequate drying time occur between the separate applications.
  - Entered as the total combined rate in Appendix 4 of the NMP Spreadsheet.
    - A note must be included in the NMP Summary Notes indicating that the planned rate must be applied in separate applications during the same application season with adequate drying time between the applications.
    - In addition, the note must include the specific calibrated rates for each separate application.

# Vegetable Crop P Removal

## Appendix 4: Crop & Manure Management Information

- A standard P removal value for commercial vegetable crops was included in Appendix 4.
- The guidance states:
  - “A standard P removal value of 50 pounds per acre should be used for all commercial vegetable crops.”

# Fallow Fields

## Appendix 4: Crop & Manure Management Information

- Guidance was added to Appendix 4 to explain how to plan for fallow fields in NMPs.
- The guidance states:
  - “Fields that are planned to be fallow with no harvested crop for the crop year should not be included in the nutrient management plan. The Act 38 regulations require that fields receiving manure applications have a growing, harvested crop. Therefore, the nutrient management plan cannot plan for manure applications on fallow fields.”

# Significant Management Change

## Appendix 5: Phosphorus Index

- A significant management change on an operation requires that all fields on the operation must be evaluated using Part B of P Index.
  - Guidance was added to Appendix 5 to clarify how long this requirement is in effect.
- The added guidance states:
  - **“A significant management change for an operation will remain in effect for the duration of the three years of an approved nutrient management plan. After the triennial review the significant management change status will be terminated for Part A of the P Index.”**

# Grazing Application Method

## Appendix 5: Phosphorus Index

- Guidance was provided in Appendix 5 to clarify which “Manure Application Method” to use for the uncollected manure when evaluating pasture fields that are grazed year-round.
- This guidance states:
  - “When the nutrient management plan includes uncollected manure from year-round grazing, use one of the following options to select the appropriate factor(s):
    - Use the worst case scenario “Surface applied to frozen or snow covered soil” for all of the uncollected manure groups for the pasture field.
    - Apply the uncollected manure groups as multiple applications to the pasture field in Appendix 4 of the NMP Spreadsheet, selecting the factor corresponding to the uncollected manure group season. In some cases this may require creating separate manure groups in Appendix 3 of the NMP Spreadsheet.”

# Manure Storage Freeboard

## Appendix 6: Manure Management

- The guidance for manure storage freeboard in the “Manure Storage Capacity” section of Appendix 6: Manure Management was enhanced to include an explanation regarding CAFO site requirements.
- In addition, the guidance in the “Under Evidence of Manure Storage Overflowing or Maintained above Design Full Levels” was edited to provide additional clarification.



# NBS Summary Notes

## Appendix 8: Importer/Broker Agreements & Nutrient Balance Sheets

- Guidance was added to clarify the required summary notes in NBSs
- There are five scenarios that require notes to be included in the Nutrient Balance Sheet Summary Notes:
  - P Banking
  - Crop Removal Recommendation Basis
  - Manure Applied to Pastures
  - 9000 Gallon Rate Limit
  - Winter Manure Application

# Broker Agreements

## Appendix 8: Importer/Broker Agreements & Nutrient Balance Sheets

- A sample exporter / broker agreement for brokers that work (or are headquartered) outside of Pennsylvania was added to the manual.

# Manure Exporter Table

## Appendix 8: Importer/Broker Agreements & Nutrient Balance Sheets

- Farms that export manure to multiple importers sometimes do not know how much manure is to be exported to each importer.
- Guidance has been added that a table can be inserted in in Appendix 8 that lists the importers and quantities of manure that can be exported to each importer.

# Manure Storages

- **Section III: Minimum Standards for Manure Storage Facilities**
- When cleaning out chicken houses and stacking the manure for loading onto trucks for a couple of days, there was concern for what to call that short timeframe and the area where the manure is stacked.
- Often these areas are called manure storage areas but they usually don't meet the definition of infield stacking or temporary stacking.

# Manure Storages

## Section III: Minimum Standards for Manure Storage Facilities

- Additional guidance was added that states:
  - “Loading areas adjacent to a poultry house: The normal operation of these facilities involves removing the waste and litter several times a year. Some or all of the material may be removed prior to the next flock. The material can be pushed out the end of the facility and stockpiled for a short time period till it is loaded and hauled away. The other method is to load up and go out a side door to direct load into a truck or spreader.”
  - These handling and loading areas are part of their waste transfer system and must meet the following:
    - Must be built to the Waste Transfer (634) Standard found in the FOTG.
    - Must have a concrete surface.
    - Larger pads shall be sloped or bermed to direct on-site runoff to a grassed area.
    - Offsite runoff shall be directed around area.
    - Pile must covered if left on site for more than 14 days on CAFO operations.
    - Wastes to be removed as soon as possible.
    - If the wastes are to be left on-site for more than 28 days, the facility shall be converted to meet CPS Manure Storage Facilities (313).

# Agronomy Guide Tables

## Supplement 1: Agronomy Guide Tables

- Update tables in the 2017-2018 Penn State Agronomy Guide:
  - Table 1.2-18
    - Corn silage removal values
  - Table 1.2-13
    - Added missing solid and liquid values for dairy, beef and swine
  - Table 1.2-14A (to provide consistency and clarification)
    - Reorganized the “Planned Manure Application Season” column
    - Edited the descriptions in the “Planned Manure Target Crop Utilization”

# Sample NBSs

- Supplement 3: Nutrient Balance Worksheet User Guide in Version 9.0 of the Technical Manual has been removed
- Supplement 4: Sample Nutrient Balance Sheet – Word/PDF and Spreadsheet in Version 9.0 has been divided into:
  - Supplement 3: Sample Nutrient Balance Sheet (Excel)
  - Supplement 4: Sample Nutrient Balance Sheet (Word)

# Update Standard Animal Weights

## Supplement 5: Standard Animal Weights

- Supplement 5 was updated to include the changes suggested by an extensive review of each of the species categories and approved by the State Conservation Commission.



# Density of Bedding Materials

## Supplement 6: Density of Bedding Materials

- When bedding is added to a liquid manure group, the weight of bedding must be converted to a volume (gallons) amount.
- A additional column was added to the table
  - Volume (gallons/lb)
- Using this value for eliminates previous “involved” calculation
  - Significantly simplifies the calculation process

# Rainfall Data Weblink Footnote

## Supplement 9: PA 25-Year 24-Hour Storm Rainfall Data

- The following footnote was provided in to provide a weblink to the NOAA 14 website:
  - “From NOAA14. Site specific rainfall depths for all rainfall frequencies including the 100 yr-24hr can be obtained by going to the following <http://hdsc.nws.noaa.gov/hdsc/pfds/site>. Print out results for documentation.”

# Exporter Agreements

## Supplement 11: Exporter Agreements

- Additional information was added to the sample “Exporter/Importer Agreement - Manure Used for Agricultural Land Application”.
- The following was added to the agreement:
  - “Other manures (type, amount) imported to the site AND/OR utilized on the site: (Note- this would include manure that is generated on the site by the importers animals, etc.) \_\_\_\_\_
  - If other manure is generated, imported and/or utilized, is it applied to the same acres as indicated in item “g” above (relating to “acres available”):  
Yes or No
  - If other manure is generated, imported and/or utilized, is it applied during the same season as the imported manure: Yes or No”

# Food Processing Waste & Sewage Sludge

## Supplement 21: Food Processing Waste & Sewage Sludge

- A new supplement has been added that addresses how food processing waste, sewage sludge, and manure, combined or applied individually, should be treated in Act 38 nutrient management plans (NMPs).
  - Provides guidance for operators that utilize:
    - Food processing waste, otherwise known as food processing residuals (FPRs)
    - Sewage sludge as a nutrient source or soil amendment for agronomic purposes
  - Discusses the statutory and regulatory requirements:
    - For land application of these materials when used alone and when mixed with manure
    - Setback distances from environmentally sensitive areas and property lines

# Approval & Release

- January 2017 Nutrient Management Advisory Board (NMAB) meeting
  - NMAB was briefed on the manual updates
  - NMAB had no significant issues with proposed changes
- September 2017 SCC meeting
  - Approved the NM Program, Technical Manual, Version 10.0
- The manual has been posted on the NM website

Questions ?