Updates to

Version 10.0 Nutrient Management Plan

and

Version 8.0 Nutrient Balance Sheet Spreadsheet

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Don Key Role Responsibilities

100% Effort to SCC Nutrient Management Efforts:

- **NMP / NBS Planning Tool Development**
- **Assist Planners and Reviewers with spreadsheet questions and concerns**
- **Develop User Guides, Guidance Documents and News articles**
- **Conduct training workshops**
- **Part of Inter Agency Nutrient Management Education Workgroup**
  - **SCC**
  - **DEP**
  - **NRCS**
  - **Penn State**

Penn State Nutrient Management Website

PennState Extension | Pennsylvania Nutrient Management Program

Home > Planning Tools

Planning Tools

https://extension.psu.edu/programs/nutrient-management

All nutrient management plans and nutrient balance sheets submitted for review and approval under the Act 38 nutrient management program must be developed using the most current version of the standardized planning tools. This page is the source of the current versions of the Act 38 planning tools.

Important Note: Users will need to unblock macros by removing the mark of the web. You only need to do this the first time a file is downloaded. To remove, right-click on the file, choose Properties, then select the Unblock checkbox on the General tab. There is a document below called First Time Use of Excel Planning Tools – Guidance to further explain this process.

Nutrient Management Plan Standard Format

Version 9.2 - June 2024

Nutrient Balance Sheet Standard Format

Version 7.2 – July 2024

Pennsylvania Phosphorus Index

Version 2.0 - October 2009

PennState Extension

Nutrient Management Plan (NMP)
Nutrient Balance Sheet (NBS)

When Major Version Updates Occur

Whenever a change that is substantially different from previous versions and / or the same input will generate a different output

Major Version updates coincide with Nutrient Management Technical Manual Updates

Released at the beginning of the crop year (October for regulatory purposes)

Minor Version updates as needed to enhance user experience and fix errors

Nutrient Management Plan (NMP) Historical Release Dates

NMP 5.0 - Dec 2015
- – First Issue of the Input Sheet Based Nutrient Management Plans

NMP 6.0 - Oct 2017
- – Updated Animal Weights & Manure Production Values (2018-2018 Agronomy Guide)

NMP 7.0 - Oct 2019
- – Update Poultry manure production values (2019-2020 Agronomy Guide)

NMP 8.0 - Oct 2021
- – Updated NRCS monthly rainfall amounts by county & Agronomy Guide table references

NMP 9.0 - Oct 2023
- – Eliminate Total N method for determining Manure N availability (during the year applied)

NMP Version 9.2 – June 2024
- – Updated ammonium N availability Factor for Late Fall/Winter - Next Summer use after unharvested cover crop

NMP 10.0 - Oct 2024
- – Update ammonium Nitrogen availability Factor for Late Fall/Winter - Next Summer use after unharvested cover crop Wanted to ensure everyone was using the correct N availability Factors.

Nutrient Balance Sheet (NBS) Historical Release Dates

NBS 4.0 - Dec 2017
- – First Issue of the Input Sheet Based Nutrient Management Plans

NBS 5.0 - Oct 2019
- – Elimination of phosphorous banking (two or three years)
- – A separate input sheet was added to complete P Index Part B fields
- – Added the ability to group P Index Part B fields

NBS 6.0 - Oct 2021
- – Update Poultry manure production values (2019-2020 Agronomy Guide Table 1.2-13.)
- – Update Manure Total N and N Fractions Table References to match updated Agronomy Guide.

NBS 7.0 - Oct 2023
- – Eliminate Total N method for determining Manure N availability (during the year applied)

NBS 7.2 - July 2024
- – Updated ammonium N availability Factor for Late Fall/Winter - Next Summer use after unharvested cover crop

NBS 8.0 - Oct 2023
- – Update ammonium N availability Factor for Late Fall/Winter - Next Summer use after unharvested cover crop

Wanted to ensure everyone was using the correct N availability Factors.

Table 3
NMP / NBS Planning Tools

Late Fall and Winter Factors for calculating manure nitrogen availability

Based on

- Season of application
- Incorporation
- Manure analysis
  - ✓ Ammonium N
  - ✓ Organic N
  - ✓ Percent Solids

Factors for calculating manure nitrogen availability based on time of application, incorporation and manure analysis with ammonium and organic nitrogen fractions.

Application Season	Application Method Days to incorporation[1]	Poultry				Swine				Other				Compost	
		> 5% Solids		< 5% Solids [2]		> 5% Solids		< 5% Solids [2]		> 5% Solids		< 5% Solids [2]			
		NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N
Spring For corn, other summer annuals, grass hay	Spring: Incorporated the same day	0.90	0.50	0.90	0.50	0.80	0.50	0.80	0.50	0.80	0.35	0.80	0.35	0.80	0.10
	Spring: Incorporated within 1 day	0.80	0.50	0.80	0.50	0.60	0.50	0.60	0.50	0.60	0.35	0.60	0.35	0.60	0.10
	Spring: Incorporated within 2 - 4 days	0.60	0.50	0.80	0.50	0.40	0.50	0.60	0.50	0.40	0.35	0.60	0.35	0.40	0.10
	Spring: Incorporated within 5 - 7 days	0.40	0.50	0.60	0.50	0.20	0.50	0.40	0.50	0.20	0.35	0.40	0.35	0.20	0.10
	Spring: Incorporated after 7 days or none	0.20	0.50	0.40	0.50	0.10	0.50	0.30	0.50	0.10	0.35	0.30	0.35	0.10	0.10
Summer For corn, other summer annuals, grass hay	Summer: Incorporated the same day	0.90	0.50	0.90	0.50	0.80	0.50	0.80	0.50	0.80	0.35	0.80	0.35	0.80	0.10
	Summer: Incorporated within 1 day	0.80	0.50	0.80	0.50	0.60	0.50	0.60	0.50	0.60	0.35	0.60	0.35	0.60	0.10
	Summer: Incorporated within 2 - 4 days	0.60	0.50	0.80	0.50	0.40	0.50	0.60	0.50	0.40	0.35	0.60	0.35	0.40	0.10
	Summer: Incorporated within 5 - 7 days	0.40	0.50	0.60	0.50	0.20	0.50	0.40	0.50	0.20	0.35	0.40	0.35	0.20	0.10
	Summer: Incorporated after 7 days or none	0.20	0.50	0.40	0.50	0.10	0.50	0.30	0.50	0.10	0.35	0.30	0.35	0.10	0.10
Early Fall[3] For fall and spring use by grass hay, small grains and small grain silage	Early Fall: Fall and spring use by grass hay, small grains and small grain silage. Incorp 0-2 days	0.80	0.30	0.80	0.30	0.60	0.30	0.60	0.30	0.60	0.25	0.60	0.25	0.40	0.10
	Early Fall: Fall and spring use by grass hay, small grains and small grain silage. Incorp 3-7 days	0.50	0.30	0.70	0.30	0.30	0.30	0.50	0.30	0.30	0.25	0.50	0.25	0.20	0.10
	Early Fall: Fall and spring use by grass hay, small grains and small grain silage. Incorp after 7 days or none	0.20	0.30	0.40	0.30	0.10	0.30	0.30	0.30	0.10	0.25	0.30	0.25	0.00	0.10
Early Fall[3] For following summer utilization by a summer crop following a non-harvested cover crop used as a green manure.	Early Fall: Next summer use by a summer crop after unharvested cover crop. Incorp 0-2 days	0.45	0.50	0.45	0.50	0.35	0.50	0.35	0.50	0.35	0.35	0.35	0.35	0.35	0.10
	Early Fall: Next summer use by a summer crop after unharvested cover crop. Incorp 3-7 days	0.20	0.50	0.40	0.50	0.15	0.50	0.35	0.50	0.15	0.35	0.35	0.35	0.15	0.10
	Early Fall: Next summer use by a summer crop after unharvested cover crop. Incorp after 7 days or none	0.00	0.50	0.20	0.50	0.00	0.50	0.20	0.50	0.00	0.35	0.20	0.35	0.00	0.10
	Early Fall: Next summer use by a summer crop with no cover crop	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.35	0.00	0.35	0.00	0.10
Late Fall[4] For following summer utilization by a summer crop following a harvested winter crop or no winter crop	Late Fall: Spring use by grass hay, small grains, small grain silage	0.60	0.30	0.60	0.30	0.50	0.30	0.50	0.30	0.50	0.25	0.50	0.25	0.50	0.10
	Late Fall: Next summer use by a summer crop with no cover crop	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.35	0.00	0.35	0.00	0.10
	Late Fall: Next summer use after unharvested cover crop	0.60	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.50	0.35	0.50	0.10
Winter[4,5] For following summer utilization by a summer crop following a harvested winter crop or no winter crop	Winter: Spring use by grass hay, small grains, small grain silage	0.60	0.30	0.60	0.30	0.50	0.30	0.50	0.30	0.50	0.25	0.50	0.25	0.50	0.10
	Winter: Next summer use by a summer crop with no cover crop	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.35	0.00	0.35	0.00	0.10
	Winter: Next summer use after unharvested cover crop	0.60	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.50	0.35	0.50	0.10
Grazing	Grazing anytime with nutrient uptake during growing season	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	n/a	n/a

Table 3 in NMP / NBS Planning Tools

Late Fall and Winter Factors for calculating manure nitrogen availability based on time of application, incorporation and manure analysis with ammonium and organic nitrogen fractions.

Factors for calculating manure nitrogen availability based on time of application, incorporation and manure analysis with ammonium and organic nitrogen fractions.															
Application Season	Application Method Days to incorporation[1]	Poultry				Swine				Other				Compost	
		> 5% Solids		< 5% Solids [2]		> 5% Solids		< 5% Solids [2]		> 5% Solids		< 5% Solids [2]			
		NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N	NH4-N	Org-N
Late Fall[4] For following summer utilization by a summer crop following a harvested winter crop or no winter crop	Late Fall: Spring use by grass hay, small grains, small grain silage	0.60	0.30	0.60	0.30	0.50	0.30	0.50	0.30	0.50	0.25	0.50	0.25	0.50	0.10
	Late Fall: Next summer use by a summer crop with no cover crop	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.35	0.00	0.35	0.00	0.10
	Late Fall: Next summer use after unharvested cover crop	0.60	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.50	0.35	0.50	0.10
Winter[4,5] For following summer utilization by a summer crop following a harvested winter crop or no winter crop	Winter: Spring use by grass hay, small grains, small grain silage	0.60	0.30	0.60	0.30	0.50	0.30	0.50	0.30	0.50	0.25	0.50	0.25	0.50	0.10
	Winter: Next summer use by a summer crop with no cover crop	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.50	0.00	0.35	0.00	0.35	0.00	0.10
	Winter: Next summer use after unharvested cover crop	0.60	0.50	0.60	0.50	0.50	0.50	0.50	0.50	0.50	0.35	0.50	0.35	0.50	0.10

App. 4: Crop Yrs. 2025			
CMU/Field ID	2		
Acres	15		
Soil Test Report Date	October 2, 2023		
Laboratory Name	AASL		
Soil Test Levels (Mehlich-3 P & K) (Show conversions to ppm in Appendix 10)	ppm P	ppm K	pH
	150	200	6.8
P Index Part A Evaluation	No to All Part A		
Part A Result	N Based		
Crop	Corn for Silage (No-till)		
Planned Yield	21 ton/A		
PSU Soil Test Recomm	N	P2O5	K2O
	160	0	0
User Soil Test Recommendation (lb/A)			
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)	10	20	10
P Index Application Method			
Double Crop Carryover N (lb/A)	0		
Manure History Description	20	Frequently - Summer Crop	
Residual Manure N (lb/A)	0	No Legume Residual N Credit	
Net Nutrients Required (lb/A)	130	-20	-10
Manure Group	Fall Dairy Liquid		
Application Season: Management (Incorporation, cover crops, etc.)	Late Fall: Next summer use after unharvested cover crop		
Nitrogen Availability Factors (NH4-N & Organic N)		NH4-N	Org. N
		0.00	0.35
P Index Application Method			
N Balanced Manure Rate (ton; gal/A)	21595 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	5333 gal/A		
	Crop P Removal	64.0	
P Index Value			
Planned Manure Rate (ton or gal/A)	5000 gal/A		
Nutrients Applied at Planned Manure Rate (lb/A)	30	60	115
Nutrient Balance after Manure	100	-80	-125
Supplemental Fertilizer (lb/A)	100	0	0
P Index Application Method			
Final Nutrient Balance (lb/A)	0	-80	-125
Multiple Application			

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Crop and Field Information Input

NMP Version 9.0

App. 4: Crop Yrs. 2025			
CMU/Field ID	2		
Acres	15		
Soil Test Report Date	October 2, 2023		
Laboratory Name	AASL		
Soil Test Levels (Mehlich-3 P & K) (Show conversions to ppm in Appendix 10)	ppm P	ppm K	pH
	150	200	6.8
P Index Part A Evaluation	No to All Part A		
Part A Result	N Based		
Crop	Corn for Silage (No-till)		
Planned Yield	21 ton/A		
PSU Soil Test Recomm	N	P2O5	K2O
	160	0	0
User Soil Test Recommendation (lb/A)			
Other Nutrients Applied (lb/A) (Nutrients applied regardless of manure)	10	20	10
P Index Application Method			
Double Crop Carryover N (lb/A)	0		
Manure History Description	20	Frequently - Summer Crop	
Residual Legume N (lb/A)	0	No Legume Residual N Credit	
Net Nutrients Required (lb/A)	130	-20	-10
Manure Group	Fall Dairy Liquid		
Application Season: Management (Incorporation, cover crops, etc.)	Late Fall: Next summer use after unharvested cover crop		
Nitrogen Availability Factors (NH4-N & Organic N)		NH4-N	Org. N
		0.50	0.35
P Index Application Method			
N Balanced Manure Rate (ton; gal/A)	11905 gal/A		
P Removal Balance Manure Rate (ton or gal/A; If required by P Index)	5333 gal/A		
	Crop P Removal	64.0	
P Index Value			
Planned Manure Rate (ton or gal/A)	5000 gal/A		
Nutrients Applied at Planned Manure Rate (lb/A)	55	60	115
Nutrient Balance after Manure	75	-80	-125
Supplemental Fertilizer (lb/A)	75	0	0
P Index Application Method			
Final Nutrient Balance (lb/A)	0	-80	-125

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Crop and Field Information Input

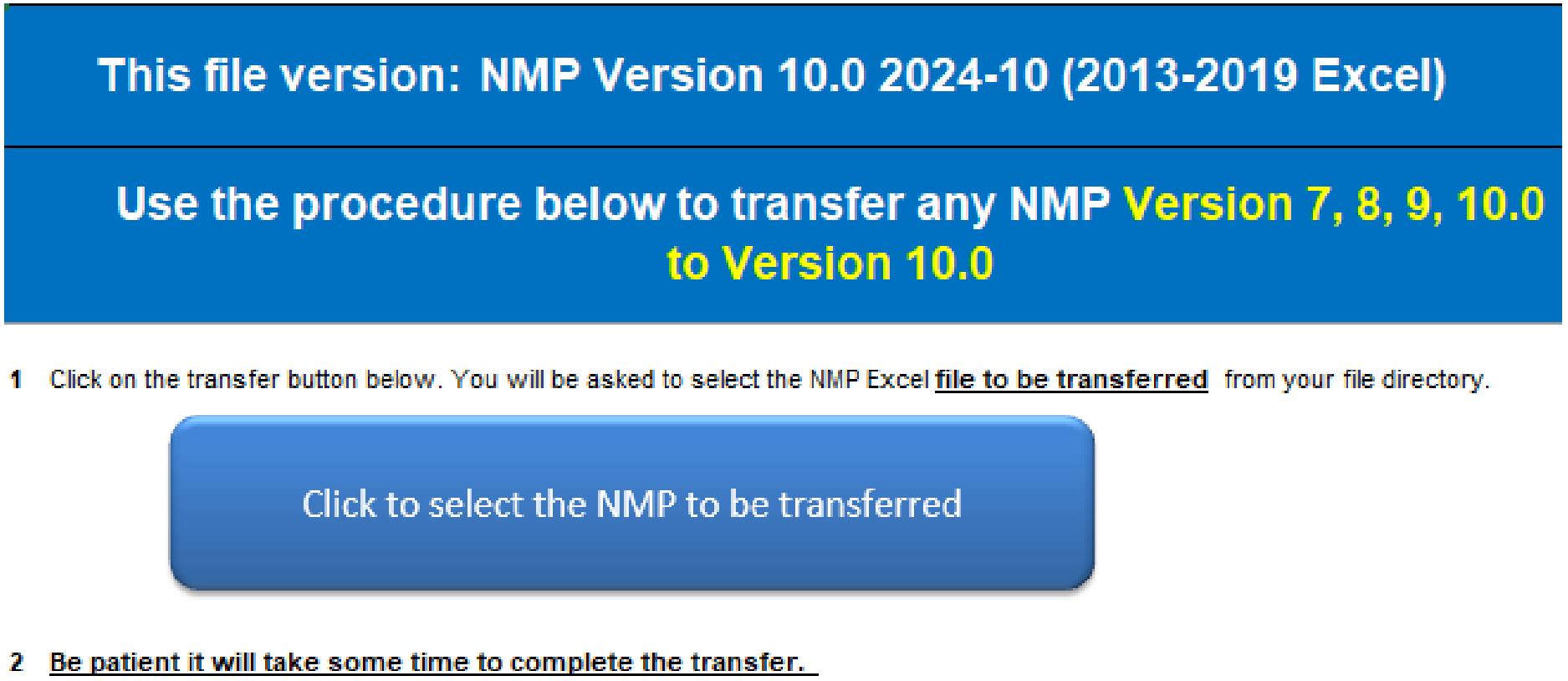
NMP Version 10.0

Only affects late fall and winter manure applications to unharvested cover crop.

Update shows less supplemental fertilizer needed after manure.

Version transfer for previous versions

- Users can transfer previous NMP / NBS plans to the most recent version and the updated availability factors will be displayed



Summary

- The update will provide the proper ammonium nitrogen credit when applying manure in late fall or winter to a cover crop

- Previous NMP / NBS can be transferred to the new version.

- This change will be reflected in a record of change for the Nutrient Management Technical Manual.

Questions or Comments?

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