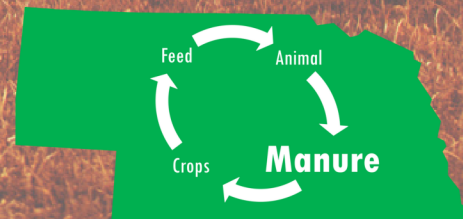


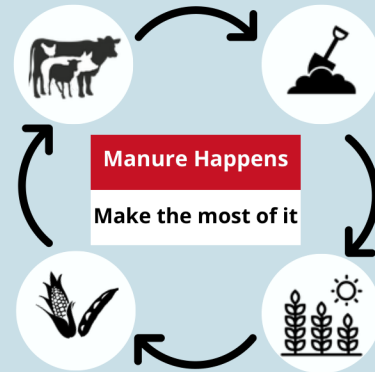
2024

NUTRIENT MANAGEMENT RECORD-KEEPING CALENDAR



The Nebraska Nutrient Management Calendar is a product of Nebraska Extension's Animal Manure Management Team. It was originally developed by: Leslie J. Johnson, Larry Howard, Richard Koelsch, Amy Millmier Schmidt, Charles A. Shapiro, and Charles S. Wortmann.

The authors would like to thank Mara Zelt, Amber Patterson, Lindsey Roark, Javed Iqbal, Aaron Nygren, Beth Zelt, and Agnes Kurtzhals for their contributions and reviews. This publication was produced with the permission of Tamilee Nennich Adolph, on whose work it was based.

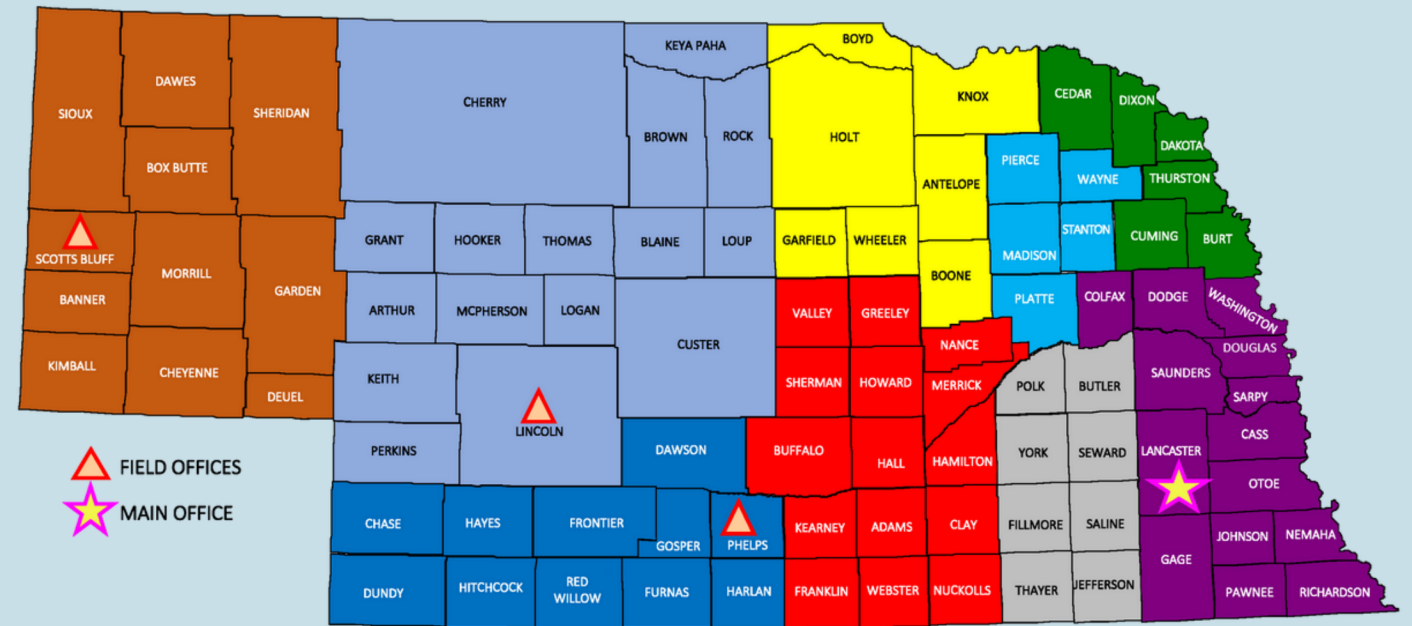


Reach out with any of your Manure Management questions!

NEBRASKA EXTENSION MANURE MANAGEMENT TEAM

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Rick Stowell	Biological Systems Engineering	402-472-3912	Extension Engineer - Animal Environment
Aaron Nygren	Saunders County	402-624-8030	Cropping Systems & Nutrient Management
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Nebraska Department of Environment and Energy (NDEE) Livestock Waste Control Inspection Areas of Coverage



Brad Edeal, Livestock and Compliance Unit Supervisor - (402) 471-0282

Jerry Newth	(308) 991-1780	Patrick Ducey, NPDES & State Permits Supervisor	(402) 471-4288
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Records for Nebraska Animal Feeding Operations

Operation ID: _____

ID Type: IIS Number Program Number Premises ID Operation Name Other: _____

General Directions

- Record the initials of the person performing the inspection each time (see table below for initial codes).
- Checkmarks will not satisfy the recordkeeping requirements.
- Record any maintenance and/or repairs.
- Correct all deficiencies within 30 days.

Daily Records and Inspections

- Inspect all waterlines (drinking and cooling) within the drainage area.
- Record any measurable rainfall that occurs at the facility and subsequent liquid storage levels.
- Record wind speed and direction daily during manure pumping activities.
- Collect carcasses and properly dispose of them within 36 hours.

Weekly Records and Inspections

- Record the liquid depth of the manure storage structure as indicated on the depth marker. Be sure that the recommended pumping levels are indicated on the marker.
- Before use, inspect any equipment used for land application of manure and/or wastewater.
- Inspect all waste control facilities, including lagoons, holding ponds, concrete tanks, pits, and manure storage structures.
- Inspect all stormwater and runoff diversion devices used to channel contaminated stormwater to storage structures.

Monthly Records and Inspections

- Inspect facilities used for disposal of carcasses. Include composting facilities, containers, and recent burial sites in the inspection.
- Do NOT dispose of carcasses in any liquid manure or process wastewater system.

Yearly Records and Inspections

- Evaluate the depth of the sludge layer of the lagoon or holding pond.
- At least 1 representative from an operation must attend Land Application Training every 5 years. See go.unl.edu/ManureEd for more information.
- The Nebraska P-Index must be assessed for land application areas every 5 years, prior to land application. See go.unl.edu/Pindex

Yearly Sample Collection and Analysis

- Collect and analyze manure and/or wastewater samples at least annually. Recommended minimum analysis should include: total nitrogen (N), organic N, and phosphorus.
- Collect soil samples every year prior to site being used for N application.
- Analyze soil samples for phosphorus at least once in 5 years.
- Irrigation water must be sampled and analyzed for nitrates every 5 years.

Yearly Site Requirements

- Complete and submit an annual report for the previous year to NDEE by March 1 (NPDES permits only).
- Keep records on site for a minimum of 5 years.

Name	Initials

Name	Initials

Name	Initials

Name	Initials

Additional information and space for records is provided on the back page.

Disclaimer: The information in this calendar should assist producers to meet legal requirements and protect environmentally sensitive areas around their operations. The use of this calendar and accompanying information is intended to serve as a guide and does not guarantee compliance with the NDEE rules and regulations.

Manure & Wastewater Applied

Weather information for each date of application, the day prior to, and day after application should be recorded on the calendar or kept separately.

Field ID & Location _____ Acres Applied _____ Date _____

Manure Source _____ Application Method _____

Application Rate _____ Available N/acre* _____ Applied P _____

When Applying Effluent: Start Pump Time _____ Stop Pump Time _____

Total Hours Pumped: _____ Time of Monitoring: _____

Field ID & Location _____ Acres Applied _____ Date _____

Manure Source _____ Application Method _____

Application Rate _____ Available N/acre* _____ Applied P _____

When Applying Effluent: Start Pump Time _____ Stop Pump Time _____

Total Hours Pumped: _____ Time of Monitoring: _____

*Nitrogen availability calculation worksheet can be found at the end of this publication.

Employee Training

At least 1 representative must complete Land Application Training every 5 years.

Training Type _____ Date _____

Employees Trained _____

Trainer & Location _____

Training Type _____ Date _____

Employees Trained _____

Trainer & Location _____

Annual Reports & Fees

For those with National Pollutant Discharge Elimination System (NPDES) permits, March 1 is the deadline for Annual Reports & fees to be submitted to NDEE.

Reports should include:

- Maximum number of livestock
- Amount of manure generated
- Transferred manure
- Land application area & contact person
- Discharge summary
- Nutrient management plan statement
- Land application nutrient calculations & supporting data

The form found at the end of this publication can be used for your annual report.

Notes:

*Additional information and space for records are provided on the back page.


More manure information can be found at manure.unl.edu and lpeic.org.

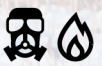
FEBRUARY 2024

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				1 Rainfall _____ Wind _____ Waterline Inspection _____	2 Rainfall _____ Wind _____ Waterline Inspection _____	3 Rainfall _____ Wind _____ Waterline Inspection _____
4 Rainfall _____ Wind _____ Waterline Inspection _____	5 Rainfall _____ Wind _____ Waterline Inspection _____	6 Rainfall _____ Wind _____ Waterline Inspection _____	7 Rainfall _____ Wind _____ Waterline Inspection _____	8 Rainfall _____ Wind _____ Waterline Inspection _____	9 Rainfall _____ Wind _____ Waterline Inspection _____	10 Rainfall _____ Wind _____ Waterline Inspection _____
11 Rainfall _____ Wind _____ Waterline Inspection _____	12 Rainfall _____ Wind _____ Waterline Inspection _____	13 Rainfall _____ Wind _____ Waterline Inspection _____	14 Rainfall _____ Wind _____ Waterline Inspection _____	15 Rainfall _____ Wind _____ Waterline Inspection _____	16 Rainfall _____ Wind _____ Waterline Inspection _____	14 Rainfall _____ Wind _____ Waterline Inspection _____
18 Rainfall _____ Wind _____ Waterline Inspection _____	19 Rainfall _____ Wind _____ Waterline Inspection _____	20 Rainfall _____ Wind _____ Waterline Inspection _____	21 Rainfall _____ Wind _____ Waterline Inspection _____	22 Rainfall _____ Wind _____ Waterline Inspection _____	23 Rainfall _____ Wind _____ Waterline Inspection _____	24 Rainfall _____ Wind _____ Waterline Inspection _____
25 Rainfall _____ Wind _____ Waterline Inspection _____	26 Rainfall _____ Wind _____ Waterline Inspection _____	27 Rainfall _____ Wind _____ Waterline Inspection _____	28 Rainfall _____ Wind _____ Waterline Inspection _____	29 Rainfall _____ Wind _____ Waterline Inspection _____		

**In case of a spill or discharge,
take immediate measures to contain the spill and
contact NDEE at 1-402-471-4239 within 24 hours.
Written reports of a spill must be submitted within 5 days.**

Monthly Inspections
Mortality Management System _____ Date _____ Notes _____
Weekly Inspections

Lagoon Depth Marker (ft) _____ Date _____ Manure Storage & Equip. Inspection _____ Notes _____ Date _____ Water & Runoff Diversion, Containment Devices _____ Notes _____ Date _____ Maintenance or Repairs _____ Date _____ Notes _____
Lagoon Depth Marker (ft) _____ Date _____ Manure Storage & Equip. Inspection _____ Notes _____ Date _____ Water & Runoff Diversion, Containment Devices _____ Notes _____ Date _____ Maintenance or Repairs _____ Date _____ Notes _____
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Lagoon Depth Marker (ft) _____ Date _____ Manure Storage & Equip. Inspection _____ Notes _____ Date _____ Water & Runoff Diversion, Containment Devices _____ Notes _____ Date _____ Maintenance or Repairs _____ Date _____ Notes _____

 **WHEN WORKING WITH MANURE...
Be aware. Be safe. Be smart.**

- Lethal gases can accumulate in manure tanks and storages. Never enter a manure tank or pit without proper training, equipment and support personnel.
- Methane gas trapped in stored manure can ignite. If foam forms in a manure storage, evacuate, ventilate, and deactivate ignition sources.

Manure & Wastewater Applied

Weather information for each date of application, the day prior to, and day after application should be recorded on the calendar or kept separately.

Field ID & Location _____ Acres Applied _____ Date _____

Manure Source _____ Application Method _____

Application Rate _____ Available N/acre* _____ Applied P _____

When Applying Effluent: Start Pump Time _____ Stop Pump Time _____

Total Hours Pumped: _____ Time of Monitoring: _____

Field ID & Location _____ Acres Applied _____ Date _____

Manure Source _____ Application Method _____

Application Rate _____ Available N/acre* _____ Applied P _____

When Applying Effluent: Start Pump Time _____ Stop Pump Time _____

Total Hours Pumped: _____ Time of Monitoring: _____

*Nitrogen availability calculation worksheet can be found at the end of this publication.

Managing Runoff Holding Ponds During Wet Weather

Excess precipitation, particularly chronic wet weather, can lead to concerns about storages overflowing even when they have been managed correctly.

1. Do not let your manure storage overflow! It is preferable to apply effluent to saturated soil than to allow a storage berm to be overtopped.
2. If a discharge occurs, call your NDEE Field Office or the State Office within 24 hours.



For more info, see manure.unl.edu, search for "Wet Weather".

Crops Harvested - Nutrients Removed

Date	Field ID & Location	Crop Type	Yield	Acreage	N Removed	P Removed

Crop removal rates can be found at the back of this publication.

Crop Nutrient Needs for Next Year

Date	Field ID & Location	Crop Type	Yield	Acreage	N Required	P Required

Manure Sold or Given Away

An information sheet containing your operation name & address along with a written statement that manure/wastewater must not enter waters of the state & the nutrient analysis must be provided to the recipient.

Manure Volume/Weight _____ Date _____

Recipient Name & Address _____

Analysis Number _____

More manure information can be found at manure.unl.edu and lpelc.org.

JUNE 2024

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						1 Rainfall _____ Wind _____ Waterline Inspection _____
2 Rainfall _____ Wind _____ Waterline Inspection _____	3 Rainfall _____ Wind _____ Waterline Inspection _____	4 Rainfall _____ Wind _____ Waterline Inspection _____	5 Rainfall _____ Wind _____ Waterline Inspection _____	6 Rainfall _____ Wind _____ Waterline Inspection _____	7 Rainfall _____ Wind _____ Waterline Inspection _____	8 Rainfall _____ Wind _____ Waterline Inspection _____
9 Rainfall _____ Wind _____ Waterline Inspection _____	10 Rainfall _____ Wind _____ Waterline Inspection _____	11 Rainfall _____ Wind _____ Waterline Inspection _____	12 Rainfall _____ Wind _____ Waterline Inspection _____	13 Rainfall _____ Wind _____ Waterline Inspection _____	14 Rainfall _____ Wind _____ Waterline Inspection _____	15 Rainfall _____ Wind _____ Waterline Inspection _____
16 Rainfall _____ Wind _____ Waterline Inspection _____	17 Rainfall _____ Wind _____ Waterline Inspection _____	18 Rainfall _____ Wind _____ Waterline Inspection _____	19 Rainfall _____ Wind _____ Waterline Inspection _____	20 Rainfall _____ Wind _____ Waterline Inspection _____	21 Rainfall _____ Wind _____ Waterline Inspection _____	22 Rainfall _____ Wind _____ Waterline Inspection _____
23 Rainfall _____ Wind _____ Waterline Inspection _____	24 Rainfall _____ Wind _____ Waterline Inspection _____	25 Rainfall _____ Wind _____ Waterline Inspection _____	26 Rainfall _____ Wind _____ Waterline Inspection _____	27 Rainfall _____ Wind _____ Waterline Inspection _____	28 Rainfall _____ Wind _____ Waterline Inspection _____	29 Rainfall _____ Wind _____ Waterline Inspection _____
30 Rainfall _____ Wind _____ Waterline Inspection _____				<p>In case of a spill or discharge, take immediate measures to contain the spill and contact NDEE at 1-402-471-4239 within 24 hours. Written reports of a spill must be submitted within 5 days.</p>		

Monthly Inspections	
Mortality Management System _____	Date _____
Notes _____	
Weekly Inspections	
Lagoon Depth Marker (ft) _____ Date _____	
Manure Storage & Equip. Inspection _____	
Notes _____ Date _____	
Water & Runoff Diversion, Containment Devices _____	
Notes _____ Date _____	
Maintenance or Repairs _____ Date _____	
Notes _____	
Lagoon Depth Marker (ft) _____ Date _____	
Manure Storage & Equip. Inspection _____	
Notes _____ Date _____	
Water & Runoff Diversion, Containment Devices _____	
Notes _____ Date _____	
Maintenance or Repairs _____ Date _____	
Notes _____	
Lagoon Depth Marker (ft) _____ Date _____	
Manure Storage & Equip. Inspection _____	
Notes _____ Date _____	
Water & Runoff Diversion, Containment Devices _____	
Notes _____ Date _____	
Maintenance or Repairs _____ Date _____	
Notes _____	

HELPFUL CONVERSIONS

- 1 CU. FT. = 7.48 GAL.
- 1 ACRE = 43,560 SQ. FT.
- 1 ACRE-INCH = 27,154 GAL.
- 1 CU. YD. = 27 CU. FT.
- 1 LB. P = 2.29 LB. P₂O
- 1 LB. K = 1.2 LB. K₂O

Crops Harvested - Nutrients Removed

Date	Field ID & Location	Crop Type	Yield	Acreage	N Removed	P Removed

Crop removal rates can be found at the back of this publication.

Crop Nutrient Needs for Next Year

Date	Field ID & Location	Crop Type	Yield	Acreage	N Required	P Required

Groundwater & Irrigation Water Sampling

Irrigation water samples must be taken and analyzed for nitrates every 5 years.

Sampling Location	Date of Collection	Results (ppm nitrate)

Manure Sold or Given Away

An information sheet containing your operation name & address along with a written statement that manure/wastewater must not enter waters of the state & the nutrient analysis must be provided to the recipient.

Manure Volume/Weight _____ Date _____

Recipient Name & Address _____

Analysis Number _____

Manure & Wastewater Sampling

Sampling Location	Sampling Details	Date of Collection

Application Equipment Maintenance

For calibration instruction visit go.unl.edu/calibration.

Date	Equipment	Maintenance Done/ Calibration Type	Manure Source & Rate

Due March 1, 2024

NPDES ANNUAL REPORT to NDEE

Name of Facility: _____ Facility ID Number: _____ Section: _____ Township: _____ Range: _____

Address: _____ City, State and Zip code: _____

- **Livestock** - Maximum number of livestock at the CAFO at any one time during the previous calendar year: _____ head of _____ (species)
- **Generated Manure** - Total amount of waste generated by the operation during the previous calendar year, including manure and process wastewater: Solid tons = _____ Liquid gallons = _____
- **Transferred Manure** - The total amount of waste sold or given away by the operation in the previous calendar year, including manure and process wastewater. Solid tons = _____ Liquid gallons = _____
- **Land Application Responsibility** -
 - a. Primary responsibility for land application: Name: _____ Phone Number: _____
Address: _____ City, State and Zip code: _____
 - b. Is the person an authorized representative, owner, or an employee? Circle one. yes / no
 - c. Most recent date the person completed land application training? _____
- **Land Application Area** -
 - a. Total number of land application acres covered by CAFO's current Nutrient Management Plan. _____ acres.
 - b. Total number of acres used for land application of livestock waste during the previous year _____ acres.
- **Discharges** - Summary of all livestock waste discharges (including manure and process wastewater) from the production areas and the land application areas during the previous year. The summary must include the following information for each discharge:
 - a. Date discharge began _____ and ended _____
 - b. Time of day/night discharge occurred _____ and the duration of discharge _____ hours.
 - c. Approximate volume of waste discharged (provide supporting figures) = _____
- **Nutrient Management Plan Information** - CAFO's current Nutrient Management Plan on file with the Department was developed and approved by a certified nutrient management planner? Circle one. yes / no
- **Changes to Nutrient Management Plan** - Yes () or No () If the CAFO has made any changes to the nutrient management plan during the previous calendar year, the changes must be reported to the Department. Supporting documents must be included with the information submitted. The information submitted should include changes in:
 - a. Any changes in land application areas: _____
 - b. Methods of soil sampling or soil analysis: _____
 - c. Means of determining land application rates: _____
- **Individual field records** - For each field crop during the previous 12 months provide:
 - a. Actual crop planted and yield: _____
 - b. Actual N and P content of manure, litter, or wastewater applied (include analysis): _____

 - c. Results of calculations made according to NMP: _____
 - d. Amount or volume of manure, litter, and wastewater applied to each field during the past 12 months: _____

 - e. Results of any soil testing for N and P during the preceding 12 months: _____
 - f. Any conversion or availability factors used to determine nutrient availability: _____
 - g. Amount of supplemental fertilizer used in previous 12 months: _____

NOTE: Changes in nutrient management plans or other major modifications may require the submission of the 1) application to NDEE, 2) the appropriate application fee, and 3) Departmental approval prior to any changes.

Manure & Wastewater Applied

Date	Field ID & Location	Vol or Weight	Acreage Applied	Manure Source	Application Method	Available N	Applied P

Crop Removal Rates

Crop	DM%	N	P2O5	Units	Crop	DM %	N	P2O5	Units
Corn (grain)	85	0.70	0.31	lb/bu	Corn (stover)	85	17.7	3.5	lb/ton
Corn (silage)	35	9.0	3.2	lb/ton	Oats (grain)	86	0.60	0.23	lb/ton
Oats (straw)	90	12.7	2.5	lb/ton	Wheat (grain)	86.5	1.2	0.50	lb/ton
Wheat (straw)	90	10.1	2.1	lb/ton	Small Grain Hay	85	34	11.7	lb/ton
Soybean (grain)	87	3.5	0.79	lb/ton	Alfalfa (hay)	85	46.2	9.3	lb/ton
Alfalfa (silage)	40	21.8	4.9	lb/ton					

Other crop information can be found on page 89 of the Manure Application Workbook, which can be found at go.unl.edu/manure_workbooks.

Crop Available Nitrogen Calculations

N Budget Records

	a. Site, Product, Crop & Yield Goal	b. Soil Test N, ppm	c. Planned N-rate*	d. NH ₄ N Content **		e. NH ₄ N Availability Factor	f. Available NH ₄ N (dxe)	g. Organic N Content		h. Organic N Availability Factor	i. Available Organic N (gxh)	j. N available from manure (f+i)	k. Application rate needed (c/j)		l. Actual application rate	m. Actual manure N applied	n. Commercial N applied ***	o. Irrigation N applied ***	p. Other N applied ***	q. Total N applied	r. Actual yield
				lb/ton	lb/1000 gal			lb/ac-in	lb/ton				lb/1000 gal	lb/ac-in							
Ex.	Home 80, feedlot solids, Corn, 200 bu.	15	100	4.8	lb/ton lb/1000 gal lb/ac-in	0.5 (see figure below)	2.4	16.4	lb/ton lb/1000 gal lb/ac-in	0.40 (see figure below)	6.6	9	11	tons/acre 1000 gal/acre ac-in/acre	10	90	0	10	0	100	215
1					lb/ton lb/1000 gal lb/ac-in				lb/ton lb/1000 gal lb/ac-in					tons/acre 1000 gal/acre ac-in/acre							
2					lb/ton lb/1000 gal lb/ac-in				lb/ton lb/1000 gal lb/ac-in					tons/acre 1000 gal/acre ac-in/acre							
3					lb/ton lb/1000 gal lb/ac-in				lb/ton lb/1000 gal lb/ac-in					tons/acre 1000 gal/acre ac-in/acre							
4					lb/ton lb/1000 gal lb/ac-in				lb/ton lb/1000 gal lb/ac-in					tons/acre 1000 gal/acre ac-in/acre							
5					lb/ton lb/1000 gal lb/ac-in				lb/ton lb/1000 gal lb/ac-in					tons/acre 1000 gal/acre ac-in/acre							

* This number should include all sources of N in lb/acre. Guidelines for fertilizer rates can be found in UNL publications listed on the manure resources page at go.unl.edu/manurepubs.

** Use "as is" basis from manure analysis. Units should be selected in NH₄-N column and used throughout the table.

*** Actual manure application rates should be adjusted for these N applications.

Future N Available

	s. Next Year (1gx0.20)	t. 2 years from now (1gx0.10)	u. 3 years from now (1gx0.05)
Ex.	33	16	8
1			
2			
3			
4			
5			

Availability Factors for Manure Nitrogen

Ammonium-N (NH₄-N) Available this Year

Sidedress Application	Preplant application	Solid	Liquid*	Liquid**
Incorporated	0.95	Incorporated***		
Sprinkler Irrigation		0.95	0.95	0.95
>0.4 inches applied	0.8	0.50	0.70	0.70
≤0.4 inches applied	0.4	0.25	0.45	0.55
		0.15	0.25	0.45
		0.00	0.00	0.25
	Not incorporated	0.00	0.00	0.00

* Applied when air temp is above 50 F.

** Applied when air temp is at or below 50 F.

*** Incorporation can be accomplished by tillage or rainfall of one-half inch or greater.

Organic- N Available this Year †

Composted Feedlot Manure	0.15
Layer manure with no bedding	0.45
All other manures or stored liquids	0.40

Future Years

Next Year	0.20
2 years from now	0.10
3 years form now	0.05

† Organic-N availability assumes spring seeded crops. For fall seeded crops multiply organic N availability factor by 0.7.