

# 2023

## NUTRIENT MANAGEMENT RECORDKEEPING CALENDAR



The Nebraska Nutrient Management Calendar is a product of Nebraska Extension's 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.

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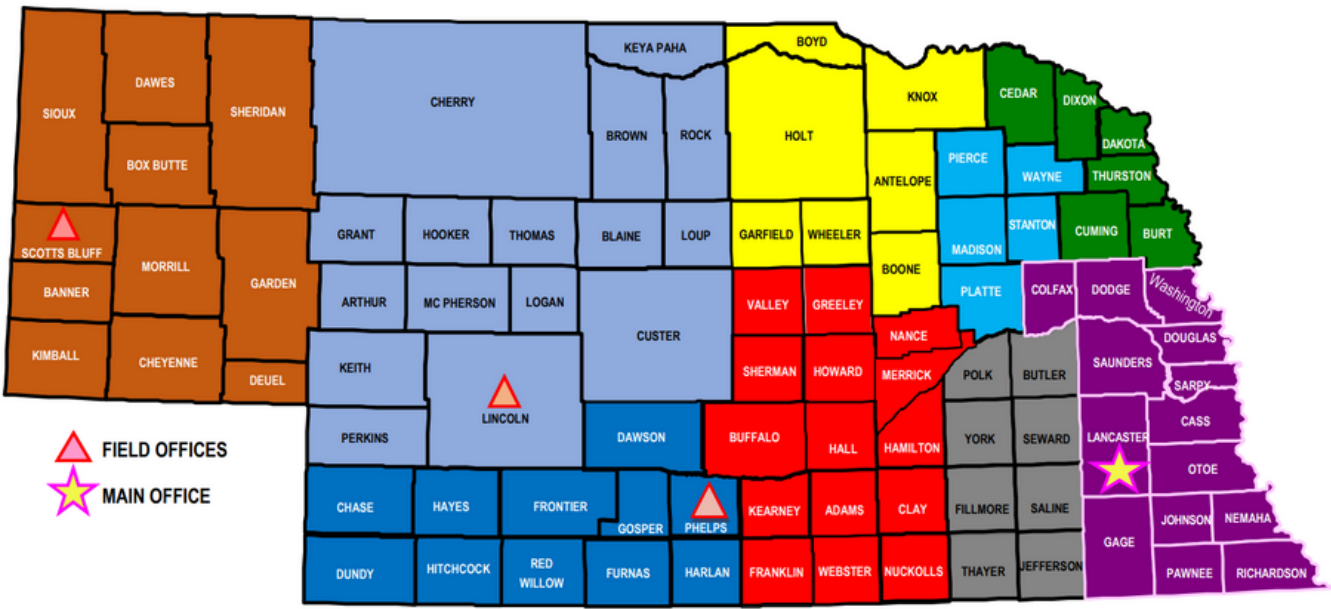


Reach out with any of your Manure Management questions!

NEBRASKA EXTENSION MANURE MANAGEMENT TEAM

Leslie Johnson	Haskell Ag Lab	402-584-3818	Animal Manure Management Extension Educator
Javed Iqbal	Agronomy & Horticulture	402-472-1432	Nutrient Management & Water Quality
Amy Schmidt	Biological Systems Engineering	402-472-3644	Manure, mortality, & contaminant management
Todd Whitney	Phelps County	308-995-4222	Soil Microbial Research, Manure Management
Rick Stowell	Biological Systems Engineering	402-472-3912	Extension Engineer- Animal Environment
Aaron Nygren	Saunders County	402-624-8030	Cropping Systems & Nutrient Management
Alfredo DiCostanzo	Cuming County	402-372-6006	Integrated Livestock Systems

Nebraska Department of Environment and Energy  
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
Glenn Marker	(308) 765-9293		
Calvin Smith	(308) 530-0874	Jinsheng You, Engineer	(402) 471-4202
Derek Schreiter	(402) 471-8132	Logan Hauder, Engineer	(402) 471-4255
Garret Newcomer	(402) 471-4280	TBD , Engineer	(402) 471-8135
Nathan Kreutzer	(402) 471-8137	Tiffany O'Neill, Agronomist	(402) 471-4255
Kevin Franzluebbbers	(402) 471-6687		
Jordan Jaeger	(402) 471-8131	Lindsey Turner Roark, Title 198 - Secondary Containment	(402) 471-4233
Jasmine Wilson	(402) 471-4221		

# 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 liquid storage levels following.
- 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](http://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](http://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\_\_\_\_\_

University of Nebraska-Lincoln UNL does not discriminate based upon any protected status. Please see [go.unl.edu/nondiscrimination](http://go.unl.edu/nondiscrimination).

### New manure nitrogen recommendations

The University of Nebraska-Lincoln has changed recommendations for crediting nitrogen following manure applications for field crops. Recommended organic-nitrogen availability factors have changed to 40% in the first growing season following application, with 20% available in the second, 10% in third, and 5% in the fourth. This is true for most animal manures with a few exceptions.

With these new nitrogen availability adjustments, total applications of nitrogen (including manure) will be lowered, resulting in reduced leaching loss of nitrate-N and emission of nitrous oxide as a greenhouse gas. Overall, the manure nitrogen crediting increase will likely improve economic values for animal manures. The same manure resources can be spread over more crop acres resulting in expanded acres gaining soil quality and erosion benefits from manure applications.



**For more information, see [manure.unl.edu](http://manure.unl.edu), "changes to nitrogen".**

### 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\_\_\_\_\_

Recipients Name & Address\_\_\_\_\_

Analysis Number\_\_\_\_\_

Manure Volume/Weight\_\_\_\_\_Date\_\_\_\_\_

Recipients Name & Address\_\_\_\_\_

Analysis Number\_\_\_\_\_

More manure information can be found at [manure.unl.edu](http://manure.unl.edu) and [lpec.org](http://lpec.org).



# MARCH 2023

### 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 \_\_\_\_\_

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.



Install guardrails or fences around manure storages to prevent accidental entry.

SUN	MON	TUE	WED	THU	FRI	SAT
			<b>1</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>2</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>3</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>4</b> Rainfall _____ Wind _____ Waterline Inspection _____
<b>5</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>6</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>7</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>8</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>9</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>10</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>11</b> Rainfall _____ Wind _____ Waterline Inspection _____
<b>12</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>13</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>14</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>15</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>16</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>17</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>18</b> Rainfall _____ Wind _____ Waterline Inspection _____
<b>19</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>20</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>21</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>22</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>23</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>24</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>25</b> Rainfall _____ Wind _____ Waterline Inspection _____
<b>26</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>27</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>28</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>29</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>30</b> Rainfall _____ Wind _____ Waterline Inspection _____	<b>31</b> 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.

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:\_\_\_\_\_

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

Application Equipment Maintenance

For calibration instructions visit [go.unl.edu/calibration](http://go.unl.edu/calibration).

Date	Equipment	Maintenance Done / Calibration Type	Manure Source & Rate

Can I Irrigate on Growing Crops?

High precipitation events can leave holding ponds or manure storage full and operators looking for irrigation options for applying manure during the growing season. Under the wrong circumstances, manure/effluent applied to growing crops can damage plant tissue and impact yields. However, good alternatives often exist during the growing season.

For more info, see [manure.unl.edu](http://manure.unl.edu), search for "Can I Irrigate".



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\_\_\_\_\_

Recipients Name & Address\_\_\_\_\_

Analysis Number\_\_\_\_\_

More manure information can be found at [manure.unl.edu](http://manure.unl.edu) and [lpec.org](http://lpec.org).





Crops Harvested - Nutrients Removed

Crop removal rates can be found on the next page of this publication.

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

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\_\_\_\_\_

Recipients 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](http://go.unl.edu/calibration).

Date	Equipment	Maintenance Done / Calibration Type	Manure Source & Rate



Due March 1, 2023

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/bu
Oats (straw)	90	12.7	2.5	lb/ton	Wheat (grain)	86.5	1.2	0.50	lb/bu
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/bu	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](http://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 <sub>4</sub> N Content **	e. NH <sub>4</sub> N Availability Factor	f. Available NH <sub>4</sub> 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
Ex.	Home 80-head lot solids, Corn, 200 bu.	15	100	4.8 <small>lb/ton lb/1000 gal lb/ac-in</small>	0.5 <small>(see figure below)</small>	24	16.4 <small>lb/ton lb/1000 gal lb/ac-in</small>	0.40 <small>(see figure below)</small>	6.6	9	11 <small>tons/acre 1000 gal/acre ac-in/acre</small>	10	90	0	10	0	100	215
1				<small>lb/ton lb/1000 gal lb/ac-in</small>			<small>lb/ton lb/1000 gal lb/ac-in</small>				<small>tons/acre 1000 gal/acre ac-in/acre</small>							
2				<small>lb/ton lb/1000 gal lb/ac-in</small>			<small>lb/ton lb/1000 gal lb/ac-in</small>				<small>tons/acre 1000 gal/acre ac-in/acre</small>							
3				<small>lb/ton lb/1000 gal lb/ac-in</small>			<small>lb/ton lb/1000 gal lb/ac-in</small>				<small>tons/acre 1000 gal/acre ac-in/acre</small>							
4				<small>lb/ton lb/1000 gal lb/ac-in</small>			<small>lb/ton lb/1000 gal lb/ac-in</small>				<small>tons/acre 1000 gal/acre ac-in/acre</small>							
5				<small>lb/ton lb/1000 gal lb/ac-in</small>			<small>lb/ton lb/1000 gal lb/ac-in</small>				<small>tons/acre 1000 gal/acre ac-in/acre</small>							

\* 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](http://go.unl.edu/manurepubs).  
\*\* Use "as is" basis from manure analysis. Units should be selected in NH-N column and used throughout the table.  
\*\*\* Actual manure application rates should be adjusted for these N applications.

Future N Available

Availability Factors for Manure Nitrogen

	s. Next Year <small>(lxgx0.20)</small>	t. 2 years from now <small>(lxgx0.10)</small>	u. 3 years from now <small>(lxgx0.05)</small>
Ex.	33	16	8
1			
2			
3			
4			
5			

Ammonium-N (NH <sub>4</sub> -N) Available this Year					
Sidedress Application		Preplant application	Solid	Liquid*	Liquid**
Incorporated	0.95	Incorporated***			
Sprinkler Irrigation		Immediately	0.95	0.95	0.95
>0.4 inches applied	0.8	One day later	0.50	0.70	0.70
≤0.4 inches applied	0.4	Two days later	0.25	0.45	0.55
		Three days later	0.15	0.25	0.45
		7+ days later	0.00	0.00	0.40
		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.	