

Section D: Commercial Fertilizer



Purpose of Section D & E



Determine nutrient loss from fertilizer applications



Understand what nutrients are persisting in soil

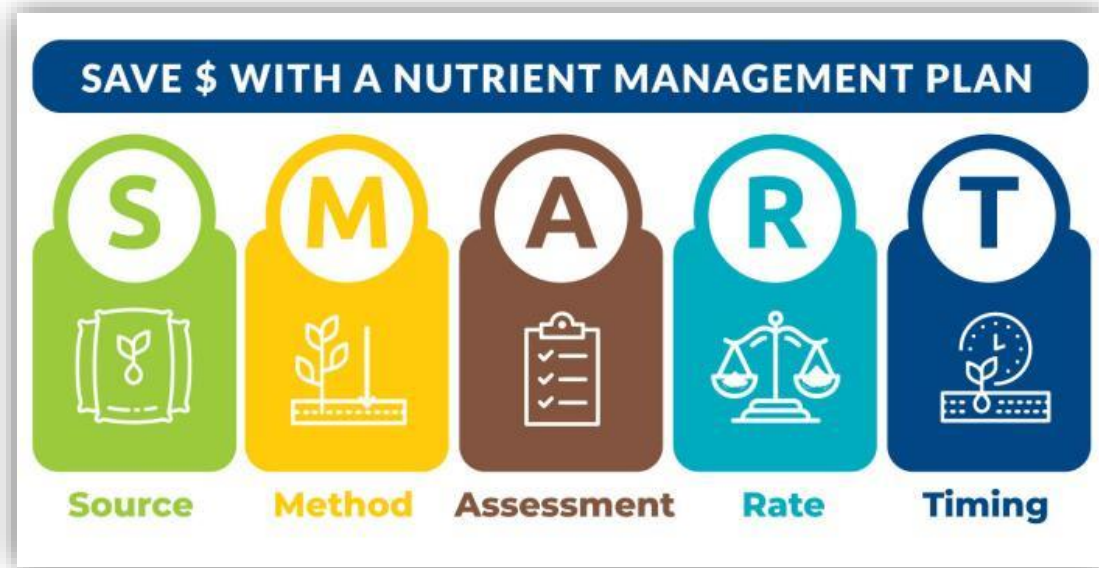


Gives insight into conservation plan effectiveness

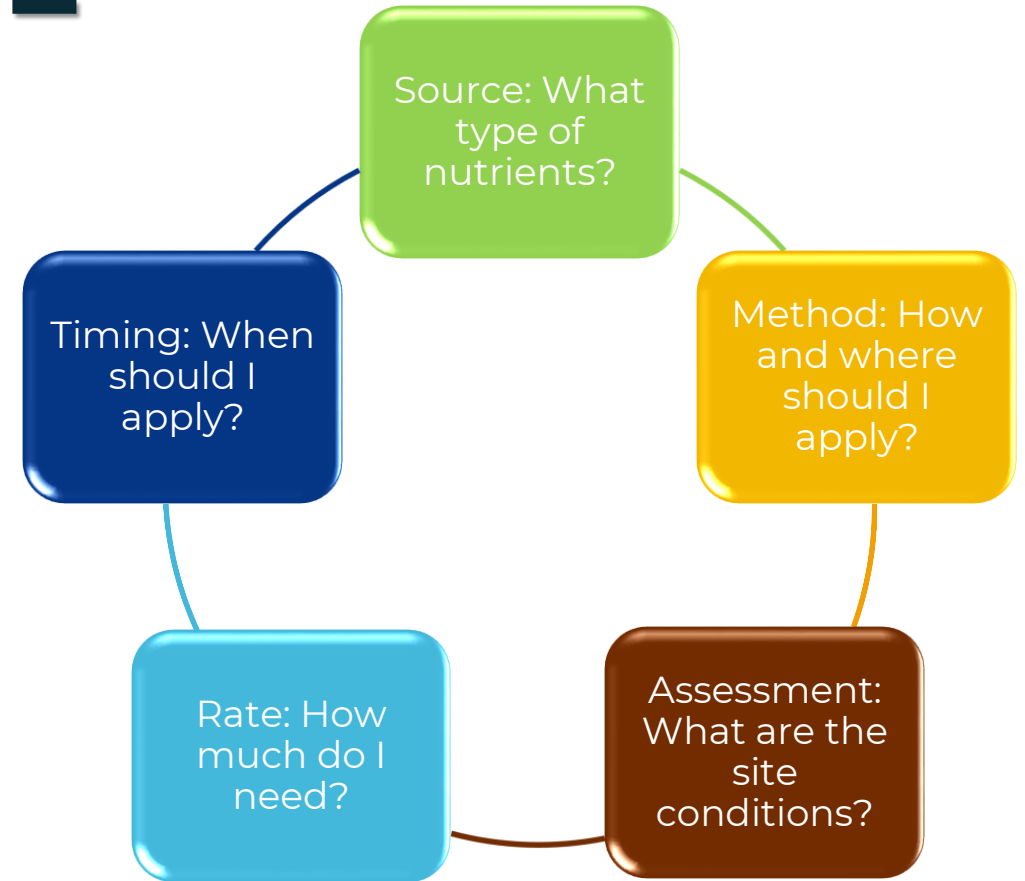


Improves research modeling

Basis for Sections D & E



<https://www.nrcs.usda.gov/getting-assistance/other-topics/nutrient-management>



Components of Fertilizer

Macronutrients

- Primary building blocks of all fertilizers
- Needed by the plant in larger amounts
- **Nitrogen** (N), **Phosphorus** (P), **Potassium** (K)

Secondary nutrients

- Less essential in smaller amounts
- **Sulphur** (S), Calcium (Ca), Magnesium (Mg)

Micronutrients

- Necessary in trace amounts
- Boron (B), Copper (Cu), Iron (Fe), Zinc (Zn)

Types of Fertilizer

Inorganic

Commercial fertilizer

Made from non-living sources

Much cheaper

Fast acting

Can target specific nutrient deficiencies

Organic

Manure, compost, bone meal

Derived from natural sources

More expensive

Less cost effective, slow-release

Harder to handle, bulky

Soil amendments

Lime – adjusts soil pH

Gypsum – help soil structure, drainage

Can be organic

Not always needed

Forms of Fertilizer

01

Nitrogen (N)

- Ammonium (NH_4)
- Ammonia (NH_3)
- Nitrate (NO_3)
- Urea ($\text{CH}_4\text{N}_2\text{O}$)

02

Phosphorus (P_2O_5)

- Phosphate (PO_4)

03

Potassium (K_2O)

- Potash

04

Sulfur (S)

- Sulphate

Were commercial fertilizers applied?

- If **YES** for any year-
 - Include:
 - All commercial fertilizers applied – include sulfur
 - Fertilizer applied in the fall if no crop was grown that year
 - Fertilizer applied in the summer if field was unused that year
 - Custom applied by custom applicators
 - Nitrogen products applied with herbicides
 - Fertilizers included in tank mixes of pesticides (report in Section F)

D	COMMERCIAL FERTILIZER APPLICATION — SELECTED FIELD		D
1. Were commercial FERTILIZERS applied to the field for:			
	Code	Completion Code	
a. The 2024 crop?	Yes = 1 0221 No = 3	0234	
b. The 2023 crop?	Yes = 1 0235 No = 3	0233	
c. The 2022 crop?	Yes = 1 0237 No = 3	0232	

Were commercial fertilizers applied?

- If **YES** for any year-
 - Exclude:
 - Micronutrients – iron, zinc, boron
 - Soil amendments – lime, gypsum
 - Commercially prepared or applied manure
 - Unprocessed manure from a farm operation
- If **NO** for all years-
 - Still answer Questions 2 through 10



Questions 2-10

- **Questions 2-3: Phosphorous specific**
- **Question 4: Information used to inform fertilizer decisions**
 - If 4-e is “Yes”, then Section B 1-a-ii should be “Yes”
- **Question 5: Soil amendments**
- **Question 6: Soil or tissue tests**
- **Question 7: GPS**
- **Question 8: Yield Monitoring**
- **Question 9: Fertilizer placement**
- **Question 10: Remote Sensing**

Yes/No – Year questions vs single question

	2024	2023	2022
5. In which of the following years (2024, 2023, and/or 2022) were soil amendments other than nutrients (such as lime or gypsum) added to this field?	0283	0285	0287
[If Yes — Continue for that year. If No — for all years, Go to Item 6.]	Yes = 1 No = 3		
a. Were the amendments added to address pH, soil structure, or micronutrient-related problems?	0284	0286	0288
	Yes = 1 No = 3		
6. Were any of the following types of soil or tissue tests performed to determine nutrient need on this field?	Code		
a. Pre-plant or pre-sidedress nitrate-nitrogen test	Yes = 1 No = 3	0272	

Remote Sensing Basics

Uses satellites, drones, planes, or other airborne sensors to collect data remotely of locations on Earth by gathering real-time information

■ Applications

- Monitor crop health
 - Measure plant growth
 - Estimate yields
 - Map soils
 - Detect pests
- Global Positioning Systems (GPS)
 - Global Information Systems (GIS)



Ways to Report Fertilizer Applications

■ Percent Analysis

- Percent of active nutrients applied - often referred to as a blend
- Example: 10-10-10 is 10% each of N-P-K
- Sometimes includes Sulphur, 13-13-13-5 for 5% Sulfur N-P-K-S
- Can be reported in any unit: pounds, tons, gallons, quarts
- *If the total of the first three values exceeds 85, the farmer is probably reporting actual nutrients rather than percent analysis*
- *Sum of percent analysis can never be more than 100%*

■ Pounds Applied

- Recorded **per acre** (NOT total for the field)
- If operator reports total nutrients applied to the entire field:
 - Rate per acre is calculated by dividing **total pounds applied to the field** by **total acres in the field**



Fertilizer Application Methods

- **Broadcast**

- Ground without incorporation
 - Applied with ground equipment usually before emergence
- Ground with incorporation
 - Applied with ground equipment
 - Incorporated in soil with disc or cultivator
- By aircraft
 - Airplane, helicopter, or drone

- **In seed furrow**

- Placed in furrow at planting

- **In irrigation water (fertigation)**

- Anhydrous ammonia or urea most common
- Sprinkler or gravity-fed system



Fertilizer Application Methods

- **Chiseled, injected, or knifed in**
 - Application with high pressure
 - Usually anhydrous ammonia
- **Banded or side-dressed on soil surface**
 - Applied at or after planting
 - Placed in a 3 to 4 inch band on either side or above the seed
- **Foliar or directed spray**
 - Sprayed on or beneath plant foliage
 - Absorbed through the leaves

Nitrogen Inhibitors

- **Nitrification inhibitor**
 - Active ingredients: DCD, nitrapyrin, pronitradine
- **Urease inhibitor**
 - Active ingredients: NBPT
- **Chemical-coated fertilizer**
 - Sulfur-coated
 - Polymer-coated urea
- **Other**

Commercial Fertilizer Table

- **In this section, you'll use:**
 - Operator's records
 - These can help jog the memory, speed up completion of the section. Includes Nutrient Management plans.
 - Respondent booklet pages 4, 8-9.
 - Survey Supplement
 - If more than 15 applications in a crop year.



Commercial Fertilizer Table Format

- **Two sheets per crop year:**
 - Sheet 1 table columns 1-6
 - Target crop, product used, and rate.
 - Sheet 2 table columns 7-12
 - When applied, how applied, form, Nitrogen slow breakdown, and VRT use.
- Three crop year's measured
- Crops reported here should also show up in Section C – cropping history



Commercial Fertilizer Table Supplements

- Fertilizer application does not have to be every year
- Fertilizer tables are year specific - (3 separate tables)
- Use fertilizer table supplements if more lines are needed
- Include CEAP ID at the top of the supplement AND
- Number supplements according to the corresponding table
 - **Table numbers are above column 5**
 - 2024 = Table 100, Supplements = 101, 102, 103, etc.
 - 2023 = Table 200, Supplements = 201, 202, 203, etc.
 - 2022 = Table 300, Supplements = 301, 302, 303, etc.



Supplement example- Previous Year

Lines in Table	Table 200	0299
5	6	
What quantity was applied per acre?	Enter material unit.	
1	Pounds	

Previous year's fertilizer table number is table 200.

VERSION	CEAP ID	TRACT	SUBTRACT	TABLE
1	6 9 2 3 4 5 6 7 8	01	01	2 0 1
CHECKLIST				
INCLUDE		EXCLUDE		

Previous year's fertilizer supplement table number is table 201.



LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code [Enter crop code from Respondent Booklet pgs. 4 - 7.]	4 MATERIALS USED Enter actual pounds of plant nutrients applied per acre and indicate "19" in column 6 (leave column 5 blank). If only fertilizer analysis is known, enter percent analysis in this column, quantity applied per acre in column 5, and the material code in column 6. [Show Common Fertilizers in Respondent Booklet pgs. 8 - 9.]				5 What quantity was applied per acre? [Leave the column blank if pounds of actual nutrients were reported in column 4.]	6 Enter material unit. 1 Pounds 3 Tons 12 Gallons 13 Quarts 19 Pounds of actual nutrients CODE
				Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O	Sulfur S		
01	28 22	Corn, grain	188	31 16	32 20	33 0	34 0	36 100	37 1
02	28 22	Corn, grain	188	31 82	32 0	33 0	34 0	36 120	37 1
03	28 22	Corn, grain	188	31 28	32 0	33 0	34 0	36 125	37 1
04	28 22	Corn, grain	188	31 60	32 35	33 40	34 0	36	37 1

LINE	7	8	9	10	11	12	NOTES
	When was this applied? [Enter code from box above.]	How was this applied? [Enter code from box above.]	How many acres were treated in this application? Acres	Was variable rate technology (VRT) used? [Include "on-the-go" sensing.] Yes = 1 No = 3	Nitrogen slow-breakdown product [Enter code from box above.]	Fertilizer form [Enter code from box above.]	
	MM DD YY						
01	³⁰ 10 27 21 _ _ _ _ _	³⁹ 1	⁴⁰ 50.0 _	²⁹ 1	²⁶ 2	²⁷ 1	
02	³⁰ 11 01 21 _ _ _ _ _	³⁹ 6	⁴⁰ 50.0 _	²⁹ 1	²⁶ 5	²⁷ 1	
03	³⁰ 04 03 22 _ _ _ _ _	³⁹ 1	⁴⁰ 50.0 _	²⁹ 1	²⁶ 5	²⁷ 1	
04	³⁰ 04 22 22 _ _ _ _ _	³⁹ 7	⁴⁰ 50.0 _	²⁹ 1	²⁶ 5	²⁷ 1	



ENUMERATOR NOTE: Was fertilizer applied in 2016? [If Yes, continue. If No, go to Item 8b.]

8a. Now I need to record information for each fertilizer application for the 2016 crop.

[Probe for applications made in the fall of 2015 (and those made earlier if this field was fallow) for the 2016 crop year.]

CHECKLIST											
INCLUDE					EXCLUDE				Office Use Lines in Table	TABLE 100	0299 3
<input type="checkbox"/> Custom applied fertilizers <input type="checkbox"/> Sulfur					<input type="checkbox"/> Micronutrients <input type="checkbox"/> Commercially prepared manure <input type="checkbox"/> Unprocessed manure <input type="checkbox"/> Lime and gypsum						
LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code [Enter crop code from Respondent Booklet pg. 3.]	4 MATERIALS USED Enter actual pounds of plant nutrients applied per acre. If only fertilizer analysis is known, enter percent analysis in this column and quantity applied per acre in column 5. [Show Common Fertilizers in Respondent Booklet pg. 7.]				5 What quantity was applied per acre? [Leave this column blank if pounds of actual nutrients were reported in column 4.]	6 [Enter material code.]		
				Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O	Sulfur S		1 Pounds	3 Tons	12 Gallons
01	28 16	Corn	188	31 0	32 0	33 60	34 —	35 150	37 1		
02	28 16	Corn	188	31 8	32 18	33 6	34 —	35 180	37 1		
03	28 16	Corn	188	31 82	32 0	33 0	34 —	35 140	37 1		

LINE	7 When was this applied? MMDDYY	8 How was this applied? [Enter code from box above.]	9 How many acres were treated in this application? ACRES	10 Was variable rate technology (VRT) used? [include "on-the-go" sensing.] Yes = 1	NOTES
01	³⁰ 112015	³⁹ 1	⁴⁰ 264	²⁹ —	
02	³⁰ 051216	³⁹ 4	⁴⁰ 264	²⁹ —	
03	³⁰ 061516	³⁹ 6	⁴⁰ 264	²⁹ —	
	³⁰	³⁹	⁴⁰	²⁹	

ENUMERATOR NOTE: Was fertilizer applied in 2015? [If Yes, continue. If No, go to Item 8c.]

8b. Now I need to record information for each fertilizer application for the 2015 crop.
 [Probe for applications made in the fall of 2014 (and those made earlier if this field was fallow) for the 2015 crop year.]

CHECKLIST										
INCLUDE					EXCLUDE					
<input type="checkbox"/> Custom applied fertilizers					<input type="checkbox"/> Micronutrients					
<input type="checkbox"/> Sulfur					<input type="checkbox"/> Commercially prepared manure					
					<input type="checkbox"/> Unprocessed manure					
					<input type="checkbox"/> Lime and gypsum					
					Office Use	TABLE 200	0299			
LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code <small>[Enter crop code from Respondent Booklet pg. 3.]</small>	4 MATERIALS USED <small>Enter actual pounds of plant nutrients applied per acre. If only fertilizer analysis is known, enter percent analysis in this column and quantity applied per acre in column 5.</small> <small>[Show Common Fertilizers in Respondent Booklet pg. 7.]</small>				5 What quantity was applied per acre? <small>[Leave this column blank if pounds of actual nutrients were reported in column 4.]</small>	6 <small>[Enter material code.]</small> 1 Pounds 3 Tons 12 Gallons 13 Quarts 19 Pounds of actual nutrients CODE	
				Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O	Sulfur S			
01	28 15			31	32	33	34	36	37	
02	28 15			31	32	33	34	36	37	
03	28 15			31	32	33	34	36	37	
04	28 15			31	32	33	34	36	37	
05	28 15			31	32	33	34	36	37	
06	28 15			31	32	33	34	36	37	
07	28 15			31	32	33	34	36	37	
08	28 15			31	32	33	34	36	37	
09	28 15			31	32	33	34	36	37	
10	28 15			31	32	33	34	36	37	
11	28 15			31	32	33	34	36	37	
12	28 15			31	32	33	34	36	37	
13	28 15			31	32	33	34	36	37	
14	28 15			31	32	33	34	36	37	

K

* No fertilizer in 2015



ENUMERATOR NOTE: Was fertilizer applied in 2014? [If Yes, continue. If No, go to Section E.]

8c. Now I need to record information for each fertilizer application for the 2014 crop.

[Probe for applications made in the fall of 2013 (and those made earlier if this field was fallow) for the 2014 crop year.]

CHECKLIST										
INCLUDE					EXCLUDE					
<input type="checkbox"/> Custom applied fertilizers <input type="checkbox"/> Sulfur					<input type="checkbox"/> Micronutrients <input type="checkbox"/> Commercially prepared manure <input type="checkbox"/> Unprocessed manure <input type="checkbox"/> Lime and gypsum					
LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code [Enter crop code from Respondent Booklet pg. 3.]	4 MATERIALS USED Enter actual pounds of plant nutrients applied per acre. If only fertilizer analysis is known, enter percent analysis in this column and quantity applied per acre in column 5. [Show Common Fertilizers in Respondent Booklet pg. 7.]				5 What quantity was applied per acre? [Leave this column blank if pounds of actual nutrients were reported in column 4.]	6 [Enter material code.] 1 Pounds 3 Tons 12 Gallons 13 Quarts 19 Pounds of actual nutrients CODE	
				Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O	Sulfur S			
01	28 14	Corn	188	31 8	32 8	33 60	34 -	36 150	37 1	
02	28 14	Corn	188	31 8	32 18	33 6	34 -	36 180	37 1	
03	28 14	Corn	188	31 82	32 8	33 6	34 -	36 140	37 1	
04	28 14			31	32	33	34	36	37	
05	28 14			31	32	33	34	36	37	
06	28 14			31	32	33	34	36	37	
07	28 14			31	32	33	34	36	37	
08	28 14			31	32	33	34	36	37	
09	28 14			31	32	33	34	36	37	
10	28 14			31	32	33	34	36	37	
11	28 14			31	32	33	34	36	37	
12	28 14			31	32	33	34	36	37	
13	28 14			31	32	33	34	36	37	
14	28 14			31	32	33	34	36	37	

Office Use
Lines in Table

TABLE 300

0299 **3**

* Waxy Corn
Similar to 2016



LINE	7 When was this applied? MMDDYY	8 How was this applied? [Enter code from box above.]	9 How many acres were treated in this application? ACRES	10 Was variable rate technology (VRT) used? [include "on-the-go" sensing.] Yes = 1	NOTES
01	³⁰ 112513	³⁹ 1	⁴⁰ 26.4	²⁹ —	
02	³⁰ 050614	³⁹ 4	⁴⁰ 26.4	²⁹ —	
03	³⁰ 061514	³⁹ 6	⁴⁰ 26.4	²⁹ —	
	³⁰	³⁹	⁴⁰	²⁹	



LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code [Enter crop code from Respondent Booklet pg. 3.]	4 MATERIALS USED Enter actual pounds of plant nutrients applied per acre. If only fertilizer analysis is known, enter percent analysis in this column and quantity applied per acre in column 5. [Show Common Fertilizers in Respondent Booklet pg. 7.]				5 What quantity was applied per acre? [Leave this column blank if pounds of actual nutrients were reported in column 4.]	6 [Enter material code.] 1 Pounds 3 Tons 12 Gallons 13 Quarts 19 Pounds of actual nutrients CODE
				Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O	Sulfur S		
01	28 16	Corn	100	31 186%	32	33	34	36	37 19


LINE	7 When was this applied? MMDDYY	8 How was this applied? [Enter code from box above.]	9 How many acres were treated in this application? ACRES	10 Was variable rate technology (VRT) used? [include "on-the-go" sensing.] Yes = 1	NOTES
01	30 051016	39 6	40 18.4	29 -	



LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code [Enter crop code from Respondent Booklet pg. 3.]	4 MATERIALS USED Enter actual pounds of plant nutrients applied per acre. If only fertilizer analysis is known, enter percent analysis in this column and quantity applied per acre in column 5. [Show Common Fertilizers in Respondent Booklet pg. 7.]				5 What quantity was applied per acre? [Leave this column blank if pounds of actual nutrients were reported in column 4.]	6 [Enter material code.] 1 Pounds 3 Tons 12 Gallons 13 Quarts 19 Pounds of actual nutrients CODE
				Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O	Sulfur S		
01	28 16	CORN	188	31 15.2	32 75	33 111	34 -	36 —	37 19
02	28 16	C	188	31 35	32 18	33 3	34 27	36 —	37 819
03	28 16	C	188	31 205	32 —	33 —	34 —	36 —	37 19

LINE	7 When was this applied? MMDDYY	8 How was this applied? [Enter code from box above.]	9 How many acres were treated in this application? ACRES	10 Was variable rate technology (VRT) used? [Include "on-the-go" sensing.] Yes = 1	NOTES
01	30 102015 04	39 1	40 151.8	29 —	
02	30 042716	39 4	40 151.8	29 —	
03	30 052616	39 6	40 151.8	29 —	
	30	39	40	29	

Using the Respondent Booklet

- Includes **list of common fertilizer products**, which will provide the **percent active ingredients** for input in the survey.
- **Key Critical Points for Data Entry:** 
 - When entering **actual pounds of nutrients** in sheet 1 column 4, **“19”** needs to be entered in column 6. Leave column 5 blank.
 - If you are entering only the **nutrient analysis** (e.g. 32-0-0) in column 4, the **total quantity of product applied** (per acre) needs to be **entered in column 5**, and the units applied in **column 6 (1, 3, 12, or 13)**.

Section D Key Points

- **Crop Year**
 - If fertilizer was applied in the previous fall for a crop that will be harvested the following calendar year, include that application for the crop year when the crop is harvested
 - There are three separate tables to report for the past 3 crop years (Each table is 2 pages long)
- **Supplements**
 - Write CEAP ID at the top (9 digit number that starts with “6”) of ALL supplements!
 - Write correct table number on supplement
 - Not very common for fert. or manure supplements for row crop operations, but can be needed if operation is growing specialty crops
- **Percent analysis vs Actual nutrients applied**
 - If the total of the first three values exceeds 85, the farmer is probably reporting actual nutrients rather than percent analysis
 - Needs to be reported on a PER ACRE basis, not total field amounts



Sections E: Manure Application



Types and Sources of Manure

- Manure vs Commercial Fert.
- Sources
 - Commercial vs Unprocessed manure
 - Industrial
 - Commercial
 - On or Off-Farm
 - Lagoons, holding or runoff ponds
 - Methane digester
- Bulking agents – sawdust, rice husks, straw
 - Used in composted manure



Forms and Methods of Manure Application

- Dry – solids
- Wet – slurry, wastewater

- Applications
 - Broadcast, with or without incorporation
 - Liquid, with or without incorporation
 - Irrigation, sprinkler or basin/furrow

Was manure or manure compost applied?

- If **YES** for any year-
 - Include:
 - Manure produced on the farm
 - Manure purchased from other farms
 - Manure that was given as payment
 - Commercially prepared manure or compost
 - Biosolids and wastewater
 - Manure and biosolids applied the previous fall for next year's crop
- If **NO** for all years- **Continue to Section F**

1. Was manure or manure compost applied to this field for the 2016, 2015, or 2014 crop year?
 Manure applications include solids and effluents from waste lagoons, waste holding ponds, and waste runoff storage ponds. (Include commercially prepared manure.)

[Probe for applications made in the fall of 2013, 2014 and 2015 (and those made earlier if this field was fallow) for the 2014, 2015, and 2016 crop years.]

- Yes - (Enter 1 and continue.)
- No - (Enter 3, then go to Section F.)

CODE

0418	1
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2. Now I need to record information for each manure application.

Office Use Lines in Table	TABLE 001	0599
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LINE	1	2	3	4	5	6.	7	8
	Crop Year YY	Primary crop for which nutrients were intended	Crop Code [Enter crop code from Respondent Booklet pg. 3.] CODE	What quantity of manure was applied per acre?	Unit (column 4 only) 1 Pounds 3 Tons 4 Bushels 12 Gallons 14 Acres/Inch CODE	Where was the manure produced? 1 On this operation 2 Purchased 3 Obtained at no cost off this operation 4 Obtained with compensation 5 Commercially prepared manure CODE	How was the manure handled? 1 Solid 2 Liquid 3 Slurry CODE	Was a manure test done? 1 Yes 2 DK 3 No CODE
01	⁴² 14	CORN	188	⁴⁴ 3000	⁴⁵ 4	⁴⁶ 1	⁴⁷ 1	⁴⁸ 3
02	⁴² 15	CORN	188	⁴⁴ 3000	⁴⁵ 4	⁴⁶ 1	⁴⁷ 1	⁴⁸ 3

LINE	9 Results from manure analysis test OR actual amount of nutrients applied [Leave this column blank if column 8 = 2 or 3.]			10 Unit (column 9 only) [Enter code from box above.]	11 Major source of manure [Enter code from box above.]	12 Was manure composted before application? 1 Yes 2 OK 3 No CODE	13 Composting Method? [Leave this column blank if column 12 = 2 or 3] 1 Windrow 2 Static pile 3 In-Vessel 4 Other	14 When was this applied? MMDDYY	15 How was this applied? [Enter code from box above.]	16 How many acres were treated in this application? ACRES
	Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O							
01	None				10	3	-	040114	1	5.0
02					1	3	-	040915	1	5.0
	49	50	51	52	53	54	55	56	57	58

EDIT MANURE TABLE		
2016	2015	2014
0454 3	0453	0452

E

MANURE APPLICATIONS---SELECTED FIELD

E

1. Was manure or manure compost applied to this field for the 2016, 2015, or 2014 crop year?

Manure applications include solids and effluents from waste lagoons, waste holding ponds, and waste runoff storage ponds. (Include commercially prepared manure.)

[Probe for applications made in the fall of 2013, 2014 and 2015 (and those made earlier if this field was fallow) for the 2014, 2015, and 2016 crop years.]

Yes - [Enter 1 and continue.]

No - [Enter 3, then go to Section F.]

CODE

0418	1
------	---

2. Now I need to record information for each manure application.

Office Use Lines in Table	TABLE 001	0599	3
------------------------------	--------------	------	---

LINE	1	2	3	4	5	6	7	8
	Crop Year	Primary crop for which nutrients were intended	Crop Code [Enter crop code from Respondent Booklet pg. 3.]	What quantity of manure was applied per acre?	Unit (column 4 only) 1 Pounds 3 Tons 4 Bushels 12 Gallons 14 Acres/Inch	Where was the manure produced? 1 On this operation 2 Purchased 3 Obtained at no cost off this operation 4 Obtained with compensation 5 Commercially prepared manure	How was the manure handled? 1 Solid 2 Liquid 3 Slurry	Was a manure test done? 1 Yes 2 DK 3 No
	YY		CODE		CODE	CODE	CODE	CODE
01	⁴² 16	Corn	188	⁴⁴ 4500.0	⁴⁵ 12	⁴⁶ 1	⁴⁷ 2	⁴⁸ 1
02	⁴² 15	Corn	188	⁴⁴ 4500.0	⁴⁵ 12	⁴⁶ 1	⁴⁷ 2	⁴⁸ 1
03	⁴² 14	Wheat	125	⁴⁴ 4500.0	⁴⁵ 12	⁴⁶ 1	⁴⁷ 2	⁴⁸ 1



LINE	9 Results from manure analysis test OR actual amount of nutrients applied [Leave this column blank if column 8 = 2 or 3]			10 Unit (column 9 only) [Enter code from box above.]	11 Major source of manure [Enter code from box above.]	12 Was manure composted before application? 1 Yes 2 DK 3 No CODE	13 Composting Method? [Leave this column blank if column 12 = 2 or 3] 1 Windrow 2 Static pile 3 In-Vessel 4 Other	14 When was this applied? MMDDYY	15 How was this applied? [Enter code from box above.]	16 How many acres were treated in this application? ACRES
	Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O							
01	49 120.00	50 90.00	51 90.00	52 19	53 3	54 3	55 .	56 _____	57 5	58 11.0
02	49 120.00	50 90.00	51 90.00	52 19	53 3	54 3	55 .	56 _____	57 5	58 11.0
03	49 120.00	50 90.00	51 90.00	52 19	53 3	54 3	55 .	56 _____	57 5	58 11.0

2003-2004



2. Now I need to record information for each manure application.

LINE	1 Crop Year	2 Primary crop for which nutrients were intended	3 Crop Code [Enter crop code from Respondent Booklet pg. 3.]	4 What quantity of manure was applied per acre?	5 Unit <i>(column 4 only)</i> 1 Pounds 3 Tons 4 Bushels 12 Gallons 14 Acres/inch	6 Where was the manure produced? 1 On this operation 2 Purchased 3 Obtained at no cost off this operation 4 Obtained with compensation 5 Commercially prepared manure	7 How was the manure handled? 1 Solid 2 Liquid 3 Slurry	8 Was a manure test done? 1 Yes 2 DK 3 No
	YY		CODE		CODE	CODE	CODE	CODE
01	42 16	corn	188	7	3	2	1	1
02	42 14 ¹⁵	corn	188	3.0	3	2	1	1

LINE	9 Results from manure analysis test OR actual amount of nutrients applied [Leave this column blank if column 8 = 2 or 3]			10 Unit <i>(column 9 only)</i> [Enter code from box above.]	11 Major source of manure [Enter code -from box above.]	12 Was manure composted before application? 1 Yes 2 DK 3 No	13 Composting Method? [Leave this column blank if column 12 = 2 or 3] 1 Windrow 2 Static pile 3 In-Vessel 4 Other	14 When was this applied? MMDDYY	15 How was this applied? [Enter code from box above.]	16 How many acres were treated in this application? ACRES
	Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O			CODE				
01	34.00	81.00	59.30	19	4	3	-	10 09 16	2	67.0
02	25.00	87.00	54.00	19	4	3	-	10 07 14	2	67.0

EDIT MANURE TABLE			
	2016	2015	2014
0454	3	0453 3	0452 3

Q6: Was the manure produced on operation?

6. Was any manure applied to the selected field produced **on this operation?**

Enumerator Action: Manure applied on this field that was produced on this operation **should have been reported in Item 2, column 6.**

- In our dairy farm example, **it is produced on operation = 1 (Yes)**



Q7: Manure Storage and/or Treatment

7. For each form of manure applied to this field, **what type of storage and/or treatment system** is used for the bulk of that manure?.

- In our Dairy Farm example, we chose **liquid as the manure form** (sheet 1 column 7).
- Choices would be 10, 11, 12, 13, 14, or 15.
- Types of **lagoons and holding ponds**.



Section E Key Points

■ Table Year

- There are no year specific tables for manure applications. All three years can be put into the same table within the questionnaire.

■ Notes

- Always welcomed, especially when multiple types of manure were applied/stored. Be sure to use white space at top and bottom of page when possible, but never on the inside margins (can get cut off!).

■ Reported Units

- We are interested in rate per acre, not total amount applied to entire field

■ Whaddya know?

- If the operator does not know the amount of manure applied to the field and it cannot be estimated, just find out the type and number of animals that produced the manure, and for what time period (all or just part of a year).
- Operators may not know the analysis of N P K for the manure used and as a result,
- the response for Column 10 may be unknown. This is not uncommon.

■ Decimals matter!

- 25.0 vs 25 when keyed at the National Operations Center is 25 and 2.5, respectively!



Any Questions?

