

LIQUIDS WORKSHEET 3 - APPLICATION RATES AND LAND REQUIREMENTS ¹

Tract No.										
Field No.	Acres	Soil Test Phosphorus (STP)	Crop Rotation / Sequence	Planned Application Date or Timing	Planned Application Rate ² (1,000 gal/ac)	Liquid or Commercial Fertilizer (L or C)	Actual Application Date	Actual Application Rate ² (1,000 gal/ac)	Weather at Time of Application ³ (Cloudy, Raining, Sunny)	
									24 Hours Before	24 Hours After
H	18	538	Alfalfa Hay (Ton) (legume)	Spring 2018	52					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					

1. Where land application is occurring under long term lease or agreement with adjacent landowner, fields must be included in the above table.
 2. Fields that have a "High" soil test phosphorus (>400) should implement Best Management Practices (BMPs) to reduce the risk of nutrient movement to sensitive waterbodies. BMPs may include, but not be limited to: installing conservation buffers, reducing P₂O₅ application rate, incorporating manure, adding chemical treatments to litter that tie up soluble P and keep it from moving over the landscape, and/or adjusting application timing.
 3. It illegal to make land applications when the ground is frozen. It is recommended that land applications are not made within 48 hours of forecasted precipitation.

We cannot apply to fields I & G because the soil test P level are above 800. Applying manure to an alfalfa field is a waste of nutrients and it is considered a waste disposal. Some people apply manure before seeding but never year after year.

LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres	Soil Test P Value (Mehlich 3) <input type="text" value="538"/>		
	H	18			
1. Crop or Crop Sequence/Rotation	Alfalfa Hay (Ton) (legume)				
2. Realistic Yield (Average from 5-10 Years on a per acre)	8.0				
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O		
	408	112	440		
4. Adjusted P₂O₅ Application Rate According to Threshold		112			
5. Fertilizer Credits (lbs/ac)					
6. Plant Nutrients Needed Minus Credits (lbs/ac)	408	112	440		
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	1.0	1.0	4.0		
8. Percent Nutrients Retained in System <input type="text" value="Table 1"/> Enter Table 1 values or Enter zero if lab results are used in Step 7	35%	50%	65%		
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	4.0		
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	80%	80%	100%		
11. Net Available Nutrients (lbs/1,000 gallons)	0.8	0.8	4.0		
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	52	52	52		
13. Net Application Amount for All Nutrients (lbs/ac)	42	42	208		
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-366	-70	-232		
Gallons Available <u>939,562</u> - Gallons Applied in Field <u>936,000</u> = Balance <u>3,562</u>					

If applying to a legume, apply based on phosphorus. (Unless STP exceeds 600)

- 401-600 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.
- 601-800 STP - Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.
- > 800 STP - Phosphorus applications are no longer allowed (manure may not be land applied in accordance with this guidance).

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7

N	P2O5	K2O
1	1	4

Chosen Application Rate **MUST ENTER**

52

One time application rate should not exceed 13,500 gallons per acre (or 1/2 inch per acre)

Go to Worksheet 3 Liquids

This field will need split applications.

LIQUIDS WORKSHEET 3 - APPLICATION RATES AND LAND REQUIREMENTS ¹

Tract No.										
Field No.	Acres	Soil Test Phosphorus (STP)	Crop Rotation / Sequence	Planned Application Date or Timing	Planned Application Rate ² (1,000 gal/ac)	Liquid or Commercial Fertilizer (L or C)	Actual Application Date	Actual Application Rate ² (1,000 gal/ac)	Weather at Time of Application ³ (Cloudy, Raining, Sunny)	
									24 Hours Before	24 Hours After
A	20	553	Wheat Grain (Bushel)	Fall 2018	38					
K	20	644	Alfalfa Hay (Ton) (legume)	Fall 2018	9					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					

1. Where land application is occurring under long term lease or agreement with adjacent landowner, fields must be included in the above table.
 2. Fields that have a "High" soil test phosphorus (>400) should implement Best Management Practices (BMPs) to reduce the risk of nutrient movement to sensitive waterbodies. BMPs may include, but not be limited to: installing conservation buffers, reducing P2O5 application rate, incorporating manure, adding chemical treatments to litter that tie up soluble P and keep it from moving over the landscape, and/or adjusting application timing.
 3. It illegal to make land applications when the ground is frozen. It is recommended that land applications are not made within 48 hours of forecasted precipitation.

We applied manure based upon the P level needs of the wheat; so the plant can take up the nutrients and apply the rest of the needed nutrients from commercial fertilizer from the soil test results. Applying manure to alfalfa is useless because it will take up the nutrients that were put down from the manure, so it is not needed.

LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	A	20

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Wheat Grain (Bushel)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="50.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O
	75	30	17
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	<input type="text" value="30"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	75	30	17
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	1.0	1.0	4.0
8. Percent Nutrients Retained in System <input type="text" value="Table 1"/> Enter Table 1 values or Enter zero if lab results are used in Step 7	35%	50%	65%
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	4.0
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	50%	80%	100%
11. Net Available Nutrients (lbs/1,000 gallons)	0.5	0.8	4.0
12. Application Rate (1,000 gallon/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	38	38	38
13. Net Application Amount for All Nutrients (lbs/ac)	19	30	152
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-56	0	135

Gallons Available 939,562 - Gallons Applied in Field 760,000 = Balance 179,562

- 401-500 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.
- 601-800 STP - Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.
- > 800 STP - Phosphorus applications are no longer allowed (manure may not be land applied in accordance with this guidance).

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7

N	P2O5	K2O
1	1	4

Chosen Application Rate
MUST ENTER

38

One time application rate should not exceed 13,500 gallons per acre (or 1/2 inch per acre)

Split applications are needed for this field.

LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE			
Tract	Field No.	Acres	Soil Test P Value (Mehlich 3)
	K	20	644
1. Crop or Crop Sequence/Rotation	Alfalfa Hay (Ton) (legume)		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	8.0		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P ₂ O ₅	K ₂ O
	408	112	440
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	56		
5. Fertilizer Credits (lbs/ac)			
6. Plant Nutrients Needed Minus Credits (lbs/ac)	408	56	440
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	1.0	1.0	4.0
8. Percent Nutrients Retained in System First Worksheet 2 values used or zero if lab results are used	0%	0%	0%
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	4.0
10. Percent of Available Nutrients Enter Table 2 value for N	80%	80%	100%
11. Net Available Nutrients (lbs/1,000 gallons)	0.8	0.8	4.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	9	9	9
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	7	7	36
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-401	-49	-404
Gallons Available <u>179,562</u> - Gallons Applied in Field <u>180,000</u> = Balance <u>Applied more than Available</u>			

If applying to a legume, apply based on phosphorus. (Unless STP exceeds 600)

- 401-600 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.
- 601-800 STP - Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.
- > 800 STP - Phosphorus applications are no longer allowed (manure may not be land applied in accordance with this guidance).

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7

N	P205	K20
1	1	4

Chosen Application Rate MUST ENTER

9