

Fall 2016

SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H2	32

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Wheat Silage (Ton)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="6.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O
	264	24	120
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	264	24	120
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	10.6	4.9	8.1
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	80%	95%	95%
9. Net Retained Nutrients in Manure (lbs./ton)	8.5	4.7	7.7
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	40%	80%	100%
11. Net Available Nutrients (lbs./ton)	3.4	3.7	7.7
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	4	4	4
13. Net Application Amount for All Nutrients (lbs/ac)	14	15	31
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-250	-9	-89
Tons Available <input type="text" value="184"/> - Tons Applied in Field <input type="text" value="128"/> = Balance <input type="text" value="56"/>			

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

N	P205	K20
<input type="text"/>	<input type="text"/>	<input type="text"/>

Chosen Application Rate
MUST ENTER

Go to Worksheet 3 Solids

SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H7	32

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	Wheat Silage (Ton)					
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	6.0					
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P ₂ O ₅	K ₂ O			
	264	24	120			
4. Adjusted P ₂ O ₅ Application Rate According to Threshold		24				
5. Fertilizer Credits (lbs/ac)						
6. Plant Nutrients Needed Minus Credits (lbs/ac)	264	24	120			
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	10.6	4.9	8.1			
8. Percent Nutrients Retained in System First Worksheet 2 values are used or zero if lab results are used	80%	95%	95%			
9. Net Retained Nutrients in Manure (lbs./ton)	8.5	4.7	7.7			
10. Percent of Available Nutrients Enter Table 2 value for N	40%	80%	100%			
	<input type="text" value="Table 2"/>					
11. Net Available Nutrients (lbs./ton)	3.4	3.7	7.7			
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	2	2	2			
13. Net Application Amount for All Nutrients (lbs/ac)	7	7	15			
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-257	-17	-105			
Tons Available	56	-	Tons Applied in Field	64	= Balance	Applied more than Available

- 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	P205	K20

Chosen Application Rate MUST ENTER
2

Go to Worksheet 3 Solids

SOLIDS 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 (tons/ac)	Solid or Commercial Fertilizer (S or C)	Actual Application Date	Actual Application Rate ² (tons/ac)	Weather at Time of Application ³ (Cloudy, Raining, Sunny)	
									24 Hours Before	24 Hours After
									H2	32
H7	32	450	Wheat Silage (Ton)	Fall 2016	2					
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 is 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.

In the notes, the farmer said fields H2 & H7 receive solid manure when in wheat silage, the rest of the fields receive liquid. The reason I put 4 T/ac for field H2 is because in the notes it indicates that both fields just receive solid manure, so I put more manure on the field with the lower soil test phosphorus. With field H2 & H7, the soil test phosphorus is above 45 lbs/ac so it is not the best utilization of the manure, but if the farmer only has these two fields to apply solid manure then they will have to suffice.

LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H1	20

Soil Test P Value (Mehlich 3)

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

1. Crop or Crop Sequence/Rotation	<input type="text" value="Alfalfa Hay (Ton) (legume)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="5.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O
	255	70	275
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	255	70	275
7. Nutrients in Manure (lbs/1,000 gallons) <small>Enter lab results in box on right to override Worksheet 1 values</small>	2.0	1.0	2.0
	<input type="text"/>		
8. Percent Nutrients Retained in System <input type="text" value="Table 1"/> <small>Enter Table 1 values or Enter zero if lab results are used in Step 7</small>	35%	50%	65%
	<input type="text"/>		
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	2.0	1.0	2.0
10. Percent of Available Nutrients <small>Enter Table 2 value for N</small> <input type="text" value="Table 2"/>	80%	80%	100%
	<input type="text"/>		
11. Net Available Nutrients (lbs/1,000 gallons)	1.6	0.8	2.0
12. Application Rate (1,000 gallons/ac) <small>Application limitations may apply. Enter Chosen Application Rate in box on right</small>	5	5	5
	<input type="text"/>		
13. Net Application Amount for All Nutrients (lbs/ac)	8	4	10
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-247	-66	-265

Gallons Available 356,664 - Gallons Applied in Field 100,000 = Balance 256,664

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
2	1	2

<i>Chosen Application Rate</i> MUST ENTER
5

Go to Worksheet 3 Liquids

LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H5	19

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Wheat Silage (Ton)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="6.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O
	264	24	120
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	264	24	120
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	2.0	1.0	2.0
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)	2.0	1.0	2.0
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)	1.0	0.8	2.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	11	11	11
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	11	9	22
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-253	-15	-98

Gallons Available 256,664 - Gallons Applied in Field 209,000 = Balance 47,664

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
2	1	2

Chosen Application Rate MUST ENTER
11

Go to Worksheet 3 Liquids

LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H6	11

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Barley Grain (Bushel)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="70.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O
	<input type="text" value="69"/>	<input type="text" value="29"/>	<input type="text" value="22"/>
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	<input type="text" value="69"/>	<input type="text" value="29"/>	<input type="text" value="22"/>
7. Nutrients in Manure (lbs./1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	<input type="text" value="2.0"/>	<input type="text" value="1.0"/>	<input type="text" value="2.0"/>
8. Percent Nutrients Retained in System First Worksheet 2 values used or zero if lab results are used	<input type="text" value="0%"/>	<input type="text" value="0%"/>	<input type="text" value="0%"/>
9. Net Retained Nutrients in Manure (lbs./1,000 gallons)	<input type="text" value="2.0"/>	<input type="text" value="1.0"/>	<input type="text" value="2.0"/>
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	<input type="text" value="50%"/>	<input type="text" value="80%"/>	<input type="text" value="100%"/>
11. Net Available Nutrients (lbs./1,000 gallons)	<input type="text" value="1.0"/>	<input type="text" value="0.8"/>	<input type="text" value="2.0"/>
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	<input type="text" value="5"/>	<input type="text" value="4"/>	<input type="text" value="10"/>
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	<input type="text" value="-64"/>	<input type="text" value="-25"/>	<input type="text" value="-12"/>

Gallons Available 47,664 - Gallons Applied in Field 55,000 = Balance Applied more than Available

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P ₂ O ₅	K ₂ O
<input type="text" value="2"/>	<input type="text" value="1"/>	<input type="text" value="2"/>

Chosen Application Rate MUST ENTER
<input type="text" value="5"/>

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
H1	20	75	Alfalfa Hay (Ton) (legume)	Fall 2016	5					
H5	19	36	Wheat Silage (Ton)	Fall 2016	11					
H6	11	79	Barley Grain (Bushel)	Fall 2016	5					
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 is 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.

As indicated in the notes, Alfalfa & Barley are to receive 5000 G/ac, so the rest of the liquid manure has to go on H5.