

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
Grass	3	55	Switchgrass (Ton)	Spring 2017	1					
Bchuck	2	111	Alfalfa Hay (Ton) (Legume)	Spring 2017	3					
Chuck2	3	23	Other Cool Season Grass/Grass/Grass Hay/Feed	Spring 2017	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					

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.

Basically, if you create a plan like this it is a waste disposal because a hay/leagume mixture does not need N. In order to get the most value out of manure you should apply it where N, P & K are needed (based on soil results). We did not apply manure to the garden because it has high soil test Phosphorus levels.

We applied manure to the alfalfa field because it will be a new crop but for the rest of their life span we will not apply manure. Alfalfa can utilize some of the nuritents the first year to get established but it will not utilize the N or P in later years because it is not needed.

SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	Grass	3

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Switchgrass (Ton)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="3.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P₂O₅	K₂O
	66	36	174
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)	66	36	174
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	33.0	34.0	43.0
8. Percent Nutrients Retained in System <input type="button" 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)	33.0	34.0	43.0
10. Percent of Available Nutrients Enter Table 2 value for N <input type="button" value="Table 2"/>	60%	80%	100%
11. Net Available Nutrients (lbs./ton)	19.8	27.2	43.0
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	1	1	1
13. Net Application Amount for All Nutrients (lbs/ac)	20	27	43
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-46	-9	-131
Tons Available <input type="text" value="14"/> - Tons Applied in Field <input type="text" value="3"/> = Balance <input type="text" value="11"/>			

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
33	34	43

Chosen Application Rate MUST ENTER
1

We selected 1 T/A so we don't over apply on Phosphorus. Commercial fertilizer should be used to supplement the rest of the needed nutrients. Step 13. Is nutrients applied through manure.

SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract **Bchuck** Field No. **2** Acres **2**

Soil Test P Value (Mehlich 3) **111**

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

1. Crop or Crop Sequence/Rotation	Alfalfa Hay (Ton) (Legume)		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	6.0		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N 306	P₂O₅ 84	K₂O 330
4. Adjusted P ₂ O ₅ Application Rate According to Threshold	0		
5. Fertilizer Credits (lbs/ac)			
6. Plant Nutrients Needed Minus Credits (lbs/ac)	306	84	330
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	33.0	34.0	43.0
8. Percent Nutrients Retained in System First Worksheet 2 values are used or zero if lab results are used	0%	0%	0%
9. Net Retained Nutrients in Manure (lbs./ton)	33.0	34.0	43.0
10. Percent of Available Nutrients Enter Table 2 value for N	60%	80%	100%
11. Net Available Nutrients (lbs./ton)	19.8	27.2	43.0
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	3	3	3
13. Net Application Amount for All Nutrients (lbs/ac)	59	82	129
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-247	-2	-201

Table 2

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

N	P205	K20
33	34	43

Chosen Application Rate MUST ENTER

3

Tons Available **11** - Tons Applied in Field **6** = Balance **5**

Go to Worksheet 3 Solids

This will be new alfalfa crop so we can apply manure before seeding because it can use a small amount of N to get established. The P & K will be taken up, additional nutrient needs (see in soil sample results) will have to come from commercial fertilizer

SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract Field No. Acres

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation

2. Realistic Yield (Average from 5-10 Years on a per acre basis)

	N	P ₂ O ₅	K ₂ O
3. Plant Nutrients Needed or Allowed (lbs/ac)	105	36	159
4. Adjusted P₂O₅ 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)	105	36	159
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	33.0	34.0	43.0
8. Percent Nutrients Retained in System First Worksheet 2 values are 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./ton)	33.0	34.0	43.0
10. Percent of Available Nutrients Enter Table 2 value for N	<input type="text" value="60%"/>	<input type="text" value="80%"/>	<input type="text" value="100%"/>
11. Net Available Nutrients (lbs./ton)	19.8	27.2	43.0
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>
13. Net Application Amount for All Nutrients (lbs/ac)	40	54	86
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-65	18	-73

Tons Available - Tons Applied in Field = Balance **Applied more than Available**

Table 2

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

N	P205	K20
<input type="text" value="33"/>	<input type="text" value="34"/>	<input type="text" value="43"/>

Chosen Application Rate MUST ENTER

Go to Worksheet 3 Solids

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

This field has a Fescue/White Clover mix, which means the legume (clover) produces its own N. When you look at the soil results it says no N is needed unless the legume stand is less than 25%. Applying to this field would be a waste of nutrients but these are the fields we have to work with.

We applied 2T/A to which was a waste of 40lbs. of N (step 13), but the P & K nutrients will be utilized. The rest of the need nutrients will need to come from commercial fertilizer.

