of Minnesota	Laboratory
University	Soil Testing I

Farm and Field

Department of Soil, Water, and Climate Agricultural Experiment Station Minnesota Extension Service

Client Copy

ANOKA RAMSEY COMMUNITY COLLEGE

MELANIE WAITE ALTRINGER 11200 MISSISSIPPI BLVD NW COON RAPIDS MN 55433

51377 Report No. Page

10/20/11 106784

Date Received Laboratory No.

Date Reported

10/28/11

Very High.

INTERPRETATION OF SOIL TEST RESULTS

4 1 X 4 1 - Z m

гков¬пъ

sand, loamy sand,

Soil Texture Code:

C (coarse):

SOIL TEST RESULTS スススス

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0

clay loam, silty clay loam, silty clay

loam, silt loam M (medium): sandy loam.

F (fine):

Zinc Sulfur SO4 -S ppm Potassium ppm K Phosphorus Phosphorus ppm P Bray 1 Olsen

> Nitrate NO3-N mdd

> > Buffer Index

mp/soumu Soluble Salts

%

Number Sample/

Field

Organic Matter

Estimated Texture Soil

6.5 핌

9.0

Crop and Yield Goal

Magnesium HIDGE HIDGE

Calcium

Boron

mdd

Copper ppm

Manganese

ppm

Iron ppm

Mg b/A

S ₹

В Б/А

Ω₩

Last Crop: CROP NOT SPECIFIED Crop Before Last: CROP NOT SPECIFIED; RECOMMENDATIONS AR1A Coarse

M⊓ B/A

45

43

Fe Ib/A Zh BA s Ip/A K20 P/A P205 lb/A z ğ Lime #ENP/A Method

Broadcast Row/Drill **CROP NOT SPECIFIED** 

County: ISANTI. For additional information, contact the soil extension specialist: DANIEL KAISER 612-624-3482 Website: http://soiltest.cfans.umn.edu

#### Comments

- The recommended rates of P2O5 and/or K2O are to be broadcast and incorporated before seeding and top-dressed after the 1st cutting of the 1st year in production. Re-test field before the 2nd production year. If oats are seeded as a nurse crop, apply 30 lb. N/acre.
- The recommended rates of P2O5 and/or K2O are to be top-dressed to the establised stand. Re-test in two years.
- For best results, the recommended rate of lime should be broadcast and incorporated from 6 to 12 months before seeding.
- 4 to double this suggested rate and broadcast on alternate years. If only phosphorus is recommended for any agronomic crop and the recommendation is Ib./A or less, it may not be practical to broadcast this low rate. An alternative would be
- 5. If only potash is recommended for any agronomic crop and the recommendation is 40lb./A or less, it may not be practical to broadcast this low rate. An alternative would be to double this suggested rate and broadcast on alternate years.
- Broadcast phosphate will not increase yield at this P level. Use 10-15 lb. P205/acre in a starter.
- .7 wet, use 10-15 lb. P2O5/acre in a starter for corn No phosphate fertilizer is recommended, but, if the soil temperature is low and soils are 19.
- This P level is very low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast rate. Use the starter (drill) rate and broadcast the remainder.
- This K level is low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast rate. Use the starter (drill) rate and broadcast the remainder.
- 5 No broadcast potash is recommended. Suggested rate is 10-15 lb. K20/acre in a starter 23.
- <u>=</u> Use of a starter fertilizer (fertilize with the drill for small grains) is a good way to apply K2O in contact with the seed for small grain, or 8 lb./acre of N + K2O in contact with the fertilizer at soil test levels where phosphate and/or potash are needed. Do no apply urea, thiosulfate, or boron in contact with the seed. Do not use more than 10-15 lb./acre of N + 24. seed for corn production
- 12. The soil test for sulfur is appropriate only for coarse textured (sands, loamy sand, sandy loams) soils. Sulfur recommendations are made for sandy soils only. Use an annual application of 25 lb. S/acre for alfalfa and red clover. For corn and small grains use either a broadcast application of 25 lb. S/acre or a band application of 10-15 lb. S/acre. Use this recommendation if there was no soil test for S.

- 13. In Minnesota, research with agronomic crops has shown that boron (B) use has only been beneficial for alfalfa production on limited soils. Therefore, B is not recommended for other agronomic crops.
- 14. In Minnesota, use of iron (Fe), manganese (Mn), and copper (Cu) has not increased yield of this crop. Therefore, none is recommended. Use of zinc (Zn), where needed, may increase yield at the recommended rate listed.
- 15. Although no fertilizer N is recommended on this field, as based on the test result for nitrogen, a small amount of N applied in a starter fertilizer at planting is encouraged.
- Research trials in Minnesota show that this crop will not respond to the use of micronutrients (Zn, Fe, Mn, Cu, B). Therefore, none are recommended.
- 17. If the small grain crop follows soybeans, subtact 20 lb. N/acre from the N recommendation listed.
- 18. Manure applications result in nutrient credits that should be subtracted from fertilizer needs. Proper nutrient crediting is discussed in bulletins: AG-FO-5879C, 5880C, 5881C 5882C and 5883C available at your County Extension Office.
- Do not place any fertilizer in contact with the soybean seed.
- 20. Do not apply more than 5.5 lb./acre of N + K20 in direct contact with the seed
- 21. Subtract the NO3-N test result for the top 2 feet from the recommendation value to determine the amount of fertilizer N (lb./acre) to apply.
- 22. The soil ntitrate test can be used to predict fertilizer N needs in your area if samples are taken before planting in the spring. If the sample was collected at another time, the N recommendation listed is based on yield goal, previous crop, and organic matter content. See Bulletin 3790 B (revised) for more details.
- 23. The recommended N rate shown should be used if barley is grown for malting purposes. If barley is used for feed, increase rate by 10 percent (multiply by 1.1).
- Lime recommendations are reported as lbs. of ENP per acre (Effective Neutralizing Power). To determine the tons of lime needed to be applied per acre, divide the ENP recommendation by the "ENP PER-TON" value provided by your liming material deal;
- No nitrogen is recommended because of NO3-N carryover.

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of Minnesota	Laboratory
University	Soil Testing

Farm and Field

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COON RAPIDS MN 55433

106785 51377 Laboratory No. Report No. Page

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INTERPRETATION OF SOIL TEST RESULTS

**XXXXXXX** 

M Z - L A X L A

Soil Texture Code:

C (coarse):

sand, loamy sand,

SOIL TEST RESULTS

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0 ×

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clay loam, silty clay loam,

silty clay

loam, silt loam M (medium): sandy loam

F (fine):

Manganese шдд lron ppm Zinc Sulfur SO4 -S ppm Potassium ррт К 120 Phosphorus ppm P Bray 1 29 Phosphorus Ppm P Olsen NO3-N Nitrate mdd Buffer Index

Magnesium

Calcium

Boron mdd

Copper ppm

tudd-

Mg b/A

Ca ₽¥

в ₹

ე ∯

Last Crop: CROP NOT SPECIFIED Crop Before Last: CROP NOT SPECIFIED; RECOMMENDATIONS Coarse

5.7 핍

<del>د</del>.

AR2B

Number

Field

mmhos/cm Soluble Salts

Organic

Estimated Texture Soil

Sample/

Matter

M⊓ BA Fe b/A Z A s Ib/A K20 ₽/9 P205 lb/A z Ķ Lime #ENP/A Method Crop and Yield Goal

Broadcast

Row/Drill **CROP NOT SPECIFIED** 

#### Comments

- The recommended rates of P2O5 and/or K2O are to be broadcast and incorporated before seeding and top-dressed after the 1st cutting of the 1st year in production. Re-test field before the 2nd production year. If oats are seeded as a nurse crop, apply 30 lb. N/acre.
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- For best results, the recommended rate of lime should be broadcast and incorporated from 6 to 12 months before seeding.
- to double this suggested rate and broadcast on alternate years 30 lb./A or less, it may not be practical to broadcast this low rate. If only phosphorus is recommended for any agronomic crop and the recommendation is An alternative would be **16.**
- 5. If only potash is recommended for any agronomic crop and the recommendation is 40lb./A or less, it may not be practical to broadcast this low rate. An alternative would be to double this suggested rate and broadcast on alternate years.
- Broadcast phosphate will not increase yield at this P level. Use 10-15 lb. P205/acre in a starter.
- 7. No phosphate fertilizer is recommended, but, if the soil temperature is low and soils are wet, use 10-15 lb. P2O5/acre in a starter for corn.
- This P level is very low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast 2 rate. Use the starter (drill) rate and broadcast the remainder.
- 9. This K level is low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast rate. Use the starter (drill) rate and broadcast the remainder.
- 6 No broadcast potash is recommended. Suggested rate is 10-15 lb. K20/acre in a starter 23.
- <u>-</u>2 Use of a starter fertilizer (fertilize with the drill for small grains) is a good way to apply fertilizer at soil test levels where phosphate and/or potash are needed. Do no apply urea, thiosulfate, or boron in contact with the seed. Do not use more than 10-15 lb./acre of N + 24. K20 in contact with the seed for small grain, or 8 lb./acre of N + K20 in contact with the seed for corn production.
- 12. The soil test for sulfur is appropriate only for coarse textured (sands, loamy sand, sandy loams) soils. Sulfur recommendations are made for sandy soils only. Use an annual application of 25 lb. S/acre for alfalfa and red clover. For corn and small grains use either a broadcast application of 25 lb. S/acre or a band application of 10-15 lb. S/acre. Use this recommendation if there was no soil test for S.

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- 14. In Minnesota, use of iron (Fe), manganese (Mn), and copper (Cu) has not increased yield of this crop. Therefore, none is recommended. Use of zinc (Zn), where needed, may increase yield at the recommended rate listed.
- 15. Although no fertilizer N is recommended on this field, as based on the test result for nitrogen, a small amount of N applied in a starter fertilizer at planting is encouraged.
- **6.** Research trials in Minnesota show that this crop will not respond to the use of micronutrients (Zn, Fe, Mn, Cu, B). Therefore, none are recommended.
- If the small grain crop follows soybeans, subtact 20 lb. N/acre from the N
  recommendation listed.
- 18. Manure applications result in nutrient credits that should be subtracted from fertilizer needs. Proper nutrient crediting is discussed in bulletins: AG-FO-5879C, 5880C, 5881C 5882C and 5883C available at your County Extension Office.
- 19. Do not place any fertilizer in contact with the soybean seed.
- 20. Do not apply more than 5.5 lb./acre of N + K20 in direct contact with the seed.
- 21. Subtract the NO3-N test result for the top 2 feet from the recommendation value to determine the amount of fertilizer N (lb./acre) to apply.
- 22. The soil ntitrate test can be used to predict fertilizer N needs in your area if samples are taken before planting in the spring. If the sample was collected at another time, the N recommendation listed is based on yield goal, previous crop, and organic matter content. See Bulletin 3790 B (revised) for more details.
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- Lime recommendations are reported as lbs. of ENP per acre (Effective Neutralizing Power). To determine the tons of lime needed to be applied per acre, divide the ENP recommendation by the "ENP PER TON" value provided by your liming material dealer.
- No nitrogen is recommended because of NO3-N carryover.

University of Minnesota	Soil Testing Laboratory
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ANOKA RAMSEY COMMUNITY COLLEGE MELANIE WAITE ALTRINGER 11200 MISSISSIPPI BLVD NW COON RAPIDS MN 55433

10/20/11 106786 51377 Date Received Laboratory No. Report No. Page

10/28/11 Date Reported INTERPRETATION OF SOIL TEST RESULTS ראאר α O ... D ᇰᆇ 00 sand, loamy sand, Soil Texture Code: clay loam, silty clay loam, silty clay loam, silt loam M (medium): sandy loam C (coarse): F (fine):

Magnesium Calcium Boron ppm Copper ppm Manganese ppm lron ppm Zinc SO4 -S mdd SOIL TEST RESULTS Potassium ppm K 153 Phosphorus ppm P Bray 1 46 Phosphorus ppm P Olsen NO3-N Nitrate mdd Buffer Index 5.9 핂 mmhos/cm Soluble Salts 1.1 Organic Matter Coarse Estimated Texture Soil **AR3C** Sample/ Number

Ca PA PA PA B Ib/A ე ∯ Mn Ma Ma Fe b/A Last Crop: CROP NOT SPECIFIED Zn B/A s PA K20 F/A P205 lb/A Crop Before Last: CROP NOT SPECIFIED; z Ą Lime #ENP/A Method RECOMMENDATIONS Crop and Yield Goal

Mg b/A Broadcast Row/Drill CROP NOT SPECIFIED

## The recommended rates of P2O5 and/or K2O are to be broadcast and incorporated before seeding and top-dressed after the 1st cutting of the 1st year in production. Re-test field before the 2nd production year. If oats are seeded as a nurse crop, apply 30 lb. N/acre.

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- 5. If only potash is recommended for any agronomic crop and the recommendation is 40lb./A or less, it may not be practical to broadcast this low rate. An alternative would be to double this suggested rate and broadcast on alternate years.
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- င္ဝ rate. Use the starter (drill) rate and broadcast the remainder broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast 21. This P level is very low. Use a combination of starter (drill applied for small grain) and 20.
- This K level is low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast rate. Use the starter (drill) rate and broadcast the remainder.
- 5 No broadcast potash is recommended. Suggested rate is 10-15 lb. K20/acre in a starter 23. tertilizer
- <u>-</u>2 Use of a starter fertilizer (fertilize with the drill for small grains) is a good way to apply K20 in contact with the seed for small grain, or 8 lb./acre of N + K20 in contact with the fertilizer at soil test levels where phosphate and/or potash are needed. Do no apply urea,  $_{24}$ , thiosulfate, or boron in contact with the seed. Do not use more than 10-15 lb./acre of N +  $_{24}$ . seed for corn production
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- 14. In Minnesota, use of iron (Fe), manganese (Mn), and copper (Cu) has not increased yield of this crop. Therefore, none is recommended. Use of zinc (Zn), where needed, may increase yield at the recommended rate listed.
- 15. Although no fertilizer N is recommended on this field, as based on the test result for nitrogen, a small amount of N applied in a starter fertilizer at planting is encouraged.
- 16. Research trials in Minnesota show that this crop will not respond to the use of micronutrients (Zn, Fe, Mn, Cu, B). Therefore, none are recommended.
- 17. If the small grain crop follows soybeans, subtact 20 lb. N/acre from the N recommendation listed.
- Manure applications result in nutrient credits that should be subtracted from fertilizer needs. Proper nutrient crediting is discussed in bulletins: AG-FO-5879C, 5880C, 5881C 5882C and 5883C available at your County Extension Office.
- Do not place any fertilizer in contact with the soybean seed.
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Report No. Page

11200 MISSISSIPPI BLVD NW

COON RAPIDS MN 55433

106787 51377 Laboratory No.

10/20/11

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INTERPRETATION OF SOIL TEST RESULTS

0/28/11

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0

clay loam, silty clay loam, silty clay

loam, silt loam

F (fine):

sand, loamy sand,

sandy loam M (medium):

Soil Texture Code:

C (coarse):

SOIL TEST RESULTS

Very Law

Zinc Sulfur SO4 -S mdd Potassium ppm K

Phosphorus Phosphorus ppm P

Bray 1

Olsen

Nitrate NO3-N mdd

Buffer Index

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mmhos/cm Soluble Salts

1.0

Coarse

AR4D

RECOMMENDATIONS

Crop and Yield Goal

Organic Matter

Estimated Texture Soil

Sample/ Number

Field

Magnesium

Calcium

Boron ppm

Copper

Manganese

lron ppm

шдд

Mg b/A

Sa PA PA

в₩

ე ₩

₩ PA

Fe b/A

다 절

s PA

K20 Ib/A

194 99

9.9

**Crop Before Last: CROP NOT SPECIFIED;** 

Last Crop: CROP NOT SPECIFIED

P205 Ib/A z ğ Lime #ENP/A Method

Broadcast **CROP NOT SPECIFIED** 

Row/Drill

County: ISANTI. For additional information, contact the soil extension specialist: DANIEL KAISER 612-624-3482 Website: http://soiltest.cfans.umn.edu

# 1. The recommended rates of P2O5 and/or K2O are to be broadcast and incorporated before seeding and top-dressed after the 1st cutting of the 1st year in production. Re-test field before the 2nd production year. If oats are seeded as a nurse crop, apply 30 lb.

- The recommended rates of P2O5 and/or K2O are to be top-dressed to the establised stand. Re-test in two years.
- For best results, the recommended rate of lime should be broadcast and incorporated from 6 to 12 months before seeding.
- 4 to double this suggested rate and broadcast on alternate years. 30 lb./A or less, it may not be practical to broadcast this low rate. An alternative would be If only phosphorus is recommended for any agronomic crop and the recommendation is
- 5. If only potash is recommended for any agronomic crop and the recommendation is 40lb./A or less, it may not be practical to broadcast this low rate. An alternative would be to double this suggested rate and broadcast on alternate years.
- Broadcast phosphate will not increase yield at this P level. Use 10-15 lb. P205/acre in a starter.
- .7 wet, use 10-15 lb. P2O5/acre in a starter for corn. No phosphate fertilizer is recommended, but, if the soil temperature is low and soils are 19
- œ This P level is very low. broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast 21. rate. Use the starter (drill) rate and broadcast the remainder. Use a combination of starter (drill applied for small grain) and 20.
- This K level is low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast rate. Use the starter (drill) rate and broadcast the remainder.
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- <u>:</u> Use of a starter fertilizer (fertilize with the drill for small grains) is a good way to apply seed for corn production. K20 in contact with the seed for small grain, or 8 lb./acre of N + K20 in contact with the thiosulfate, or boron in contact with the seed. Do not use more than 10-15 lb./acre of N + fertilizer at soil test levels where phosphate and/or potash are needed. Do no apply urea, 24.
- 5 a broadcast application of 25 lb. S/acre or a band application of 10-15 lb. S/acre. Use this application of 25 lb. S/acre for alfalfa and red clover. For corn and small grains use either recommendation if there was no soil test for S. The soil test for sulfur is appropriate only for coarse textured (sands, loamy sand, sandy loams) soils. Sulfur recommendations are made for sandy soils only. Use an annual 25.

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Univers	Soil Testi

# SOIL TEST REPORT Farm and Field

Department of Soil, Water, and Climate Minnesota Extension Service Agricultural Experiment Station

Client Copy

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COLLEGE
MSEY COMMUNITY COLLEGE
MSEY C

5	51377	106788	10/20/11
Page	Report No.	Laboratory No.	Date Received
ANORA RAMBET COMMONIT COLLEGE MELANIE WAITE ALTRINGER	11200 MISSISSIPPI BLVD NW	COON RAPIDS MN 55433	

10/28/11		
Date Reported	Very High	Very Low
INTERPRETATION OF SOIL TEST RESULTS	д А Ж Ж	<b>ບ ບ ບ ບ ບ</b> አአአአአ
	т — О — — — — — — — — — — — — — — — — —	M
	Soil Texture Code: C (coarse): sand, loamy sand, sandy loam	

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		Magnesium		шоо	4		
		Calcium		mod			
		Boron	шда		the second pulse that the		
		Copper	шdd		***		
		Manganese	mdd		and the second s		-
		<u>Io</u>	mdd			۵	
		Zinc	mdd			Last Crop: CROP NOT SPECIFIED	
TS	Sulfur	SO4 -S	шdd			S TON 4C	
T RESUL		Potassium	ppm K		181	Srop: CR	
SOIL TEST RESULTS	Bray 1	Phosphorus	ppm P		84	Last (	
	Olsen	Phosphorus   Phosphorus   Potassium	ppm P			ECIFIED;	-
	Nitrate	N-EON	mdd			P NOT SF	
		Buffer	Index		4)	t: CRO	
			핌		6.8	ore Las	
	,	Salts	mmhos/cm		g.	Crop Before Last: CROP NOT SPECIFI	_
	Organic	Matter	%		6.0	SNOI	
	Sample/ Estimated Organic	Soil	Texture		AR5E Coarse 0.9	RECOMMENDATIONS	
	Sample/	Field	Number		AR5E	RECON	

Crop and Yield Goal	Method	Lime #ENP/A	N A/dl	P205 lb/A	K20 lb/A	s Ib/A	Zu Ib/A	Fe Ib/A	Min Ib/A	g &	B lb/A	Ib/A	Mg Ib/A
CROP NOT SPECIFIED	Broadcast												
	Row/Drill						-						

### The recommended rates of P2O5 and/or K2O are to be broadcast and incorporated before seeding and top-dressed after the 1st cutting of the 1st year in production. Re-test field before the 2nd production year. If oats are seeded as a nurse crop, apply 30 lb.

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- This K level is low. Use a combination of starter (drill applied for small grain) and broadcast applications. Subtract the rate for starter (drill) from the suggested broadcast rate. Use the starter (drill) rate and broadcast the remainder.
- 5 No broadcast potash is recommended. Suggested rate is 10-15 lb. K20/acre in a starter 23.
- <u>:</u> K2O in contact with the seed for small grain, or 8 lb./acre of N + K2O in contact with the fertilizer at soil test levels where phosphate and/or potash are needed. Do no apply urea,  $_{24}$ , thiosulfate, or boron in contact with the seed. Do not use more than 10-15 lb./acre of N +  $_{24}$ . Use of a starter fertilizer (fertilize with the drill for small grains) is a good way to apply seed for corn production.
- 12. The soil test for sulfur is appropriate only for coarse textured (sands, loamy sand, sandy loams) soils. Sulfur recommendations are made for sandy soils only. Use an annual application of 25 lb. S/acre for alfalfa and red clover. For corn and small grains use either a broadcast application of 25 lb. S/acre or a band application of 10-15 lb. S/acre. Use this recommendation if there was no soil test for S.

13. In Minnesota, research with agronomic crops has shown that boron (B) use has only been beneficial for alfalfa production on limited soils. Therefore, B is not recommended for other agronomic crops. Comments

- 14. In Minnesota, use of iron (Fe), manganese (Mn), and copper (Cu) has not increased yield of this crop. Therefore, none is recommended. Use of zinc (Zn), where needed, may increase yield at the recommended rate listed.
- 15. Although no fertilizer N is recommended on this field, as based on the test result for nitrogen, a small amount of N applied in a starter fertilizer at planting is encouraged.
- i. Research trials in Minnesota show that this crop will not respond to the use of micronutrients (Zn, Fe, Mn, Cu, B). Therefore, none are recommended.
- 17. If the small grain crop follows soybeans, subtact 20 lb. N/acre from the N recommendation listed.
- 18. Manure applications result in nutrient credits that should be subtracted from fertilizer needs. Proper nutrient crediting is discussed in bulletins: AG-FO-5879C, 5880C, 5881C, 5882C and 5883C available at your County Extension Office.
- 19. Do not place any fertilizer in contact with the soybean seed
- 20. Do not apply more than 5.5 lb./acre of N + K20 in direct contact with the seed
- Subtract the NO3-N test result for the top 2 feet from the recommendation value to determine the amount of fertilizer N (lb./acre) to apply.
- 22. The soil ntitrate test can be used to predict fertilizer N needs in your area if samples are taken before planting in the spring. If the sample was collected at another time, the N recommendation listed is based on yield goal, previous crop, and organic matter content. See Bulletin 3790 B (revised) for more details.
- 3. The recommended N rate shown should be used if barley is grown for malting purposes. If barley is used for feed, increase rate by 10 percent (multiply by 1.1).
- Lime recommendations are reported as lbs. of ENP per acre (Effective Neutralizing Power). To determine the tons of lime needed to be applied per acre, divide the ENP recommendation by the "ENP PER TON" value provided by your liming material dealer.
- No nitrogen is recommended because of NO3-N carryover.

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