University of Minnesota
Soil Testing Laboratory

SOIL TEST REPORT
Farm and Field

Client Copy

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

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Report No.	**86011**
Laboratory No.	**169382**
Date Received	**05/24/23**
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INTERPRETATION OF SOIL TEST RESULTS

Soil Texture Code:	HIGH	PROBLEM	EXCESSIVE	9	ALKALINE												
C (coarse):						**P**	**P**	**K**	**Z**	**F**	Very High	**M**			**C**	**M**
sand, loamy sand, sandy loam						**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
M (medium):				8		**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
loam, silt loam					**H**	**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
F (fine):	MED			7	**H**	**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
clay loam, silty clay loam, silty clay					**H**	**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
					H	**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
				6	**H**	**P**	**P**	**K**	**Z**	**F**		**M**			**C**	**M**
					H	**P**	**P**	**K**	**Z**	**F**		**M**	**C**		**C**	**M**
	LOW	OK	ACID	5	**H**	**P**	**P**	**K**	**Z**	**F**	Very Low	**M**	**C**		**C**	**M**

SOIL TEST RESULTS

Sample/ Field Number	Estimated Soil Texture	Organic Matter %	Soluble Salts mmhos/cm	pH	Buffer Index	Nitrate NO3-N ppm	Olsen Phosphorus ppm P	Bray 1 Phosphorus ppm P	Potassium ppm K	Sulfur SO4 -S ppm	Zinc ppm	Iron ppm	Manganese ppm	Copper ppm	Boron ppm	Calcium ppm	Magnesium ppm
ASPN	**Coarse**	**3.6**		**7.8**			**33**	**72**	**281**		**4.0**	**17.6**	**10.1**	**1.0**		**3634**	**251**

RECOMMENDATIONS

Crop Before Last: Asparagus, Estab Planting; Last Crop: Asparagus, Estab Planting

Crop and Yield Goal	Method	Lime #ENP/A	N lb/A	P2O5 lb/A	K2O lb/A	S lb/A	Zn lb/A	Fe lb/A	Mn lb/A	Cu lb/A	B lb/A	Ca lb/A	Mg lb/A
Asparagus, Estab Planting	Broadcast	**0**	**60**	**0**	**0**		**0**	**0**	**0**	**0**		**0**	**0**
	Row/Drill						**0**						**0**

Comments: 18,55,58,60,62,64

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

Comments

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. N/acre.

2. The recommended rates of P2O5 and/or K2O are to be top-dressed to the establised stand. Re-test in two years.

3. For best results, the recommended rate of lime should be broadcast and incorporated from 6 to 12 months before seeding.

4. If only phosphorus is recommended for any agronomic crop and the recommendation is 30 lb./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.

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.

6. 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.

8. 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.

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.

10. No broadcast potash is recommended. Suggested rate is 10-15 lb. K2O/acre in a starter fertilizer.

11. 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 + K2O in contact with the seed for small grain, or 8 lb./acre of N + K2O 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.

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.

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.

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.

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).

24. 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.

25. No nitrogen is recommended because of NO3-N carryover.