University of Minnesota
Soil Testing Laboratory

SOIL TEST REPORT
Lawn and Garden

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

CITY OF CRYSTAL
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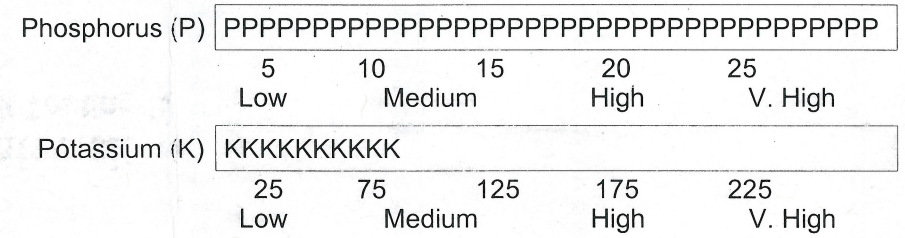
Page	**1**
Report No.	**49090**
Laboratory No.	**102622**
Date Received	**04/15/11**
Date Reported	**04/22/11**

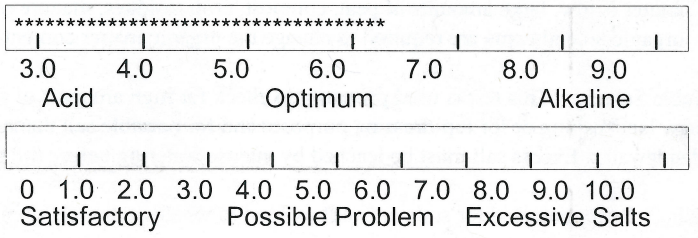
Sample/Field Number: 2011

SOIL TEST RESULTS

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	Lead ppm
Medium	**1.8**		**6.4**				**38**	**80**									**10**

INTERPRETATION OF SOIL TEST RESULTS





RECOMMENDATIONS FOR: Vegetable garden

LIME RECOMMENDATION: 0 LBS/100 SQ.FT.
TOTAL AMOUNT OF EACH NUTRIENT TO APPLY PER YEAR:*

NITROGEN	PHOSPHATE	POTASH
0.2 LBS/100 SQ.FT.	0 LBS/100 SQ.FT.	0.3 LBS/100 SQ.FT.

THE APPROXIMATE RATIO OR PROPORTION OF THESE NUTRIENTS IS: 10-0-15

Use a fertilizer with the percentage of nutrients closest to the above ratio. Apply according to the instructions on the fertilizer bag or container, or determine the amount required from the instructions given on the back side of this report. Since meeting the exact amount required for each nutrient will not be possible in most cases, it is more important to apply the amount of nitrogen required and compromise some for phosphate and potash.

If a fertilizer contains phosphate and/or potash, it can be mixed in the spring or fall into the top 4-6 inches of topsoil. If a fertilizer containing only nitrogen is used, it should be applied in the spring, tilling or raking it into the surface. Nitrogen is easily leached through soil.

For sweetcorn, tomatoes, cabbage, and vine crops such as squash and cucumbers, an additional application of 1/6 lb. nitrogen per 100 sq. ft. may be desirable at midseason. This can be accomplished by applying 1/2 lb. (about one cup) of 34-0-0 fertilizer. Throughly water fertilizer into the soil.

County: HENNEPIN. Additional information on the website http://soiltest.cfans.umn.edu/intro.htm or call Yard & Garden Desk 952-443-1426

Explanation of Soil Test Report

Soil pH: This is a measurement of acidity, which is important because it affects:
1) the availability of several plant nutrients, 2) the activity of soil microorganisms,
3) the ability of soil to hold plant nutrients.
The optimum pH for most plants and soil microorganisms is between 6.0 and 7.0. Some plants, however, such as blueberries, azaleas and others prefer more acidic conditions (i.e., lower pH). Since grasses are quite tolerant to a wide pH range, lime is generally not recommended on established grasses.

Buffer Index: This test is used only to determine the lime requirements and should not be confused with soil pH.

Organic Matter: The Regular Series test includes an estimate of the percent organic matter. The classifications used for organic matter are: Low 0-3%, Medium 3.1-4.5%, High 4.6-19%, and Organic Soil 19.1% or greater.
Organic Matter has many important functions in soils, some of which are:
1) to improve soil structure, water infiltration, drainage, and soil aeration on clayey type soils.
2) to act as a reservoir of available plant nutrients
3) to increase the water holding capacity of sandy soils. When organic matter is low, large amounts of peat, compost, crop residues, manure or other organic amendments are required to change the organic matter content of the soil.

Soluble Salts: This test is used primarily to check for high amounts of salts in "black" dirt that is used in new landscaping or for top-dressing purposes and for possible salt damage to grass from salted streets and sidewalks. Excess salt must be leached by intense watering before the plants will grow normally.

Lead: Recommended for soils or sandbox sand to which young children may be repeatedly exposed.

Other Special Tests: Recommendations are not provided for these tests since the interpretations are limited to special situations. The tests are provided for professionals only.

Interpretation of Soil Tests: The relative levels of various nutrients are indicated by a series of symbols. A line of P or K letters ending in the lower areas of the block, represents a low level of the nutrient.

Recommendations and Calculation of Fertilizer Required: Lime and plant nutrient recommendations are given in pounds per area (1000 square feet for turf, or 100 square feet for gardens, trees or shrubs). Plant nutrients are expressed as nitrogen (N), phosphate (P205) and potash (K20). The recommended plant nutrient requirements can be met by applying a given amount of fertilizer(s).

Commercial fertilizers are identified with a 3-numeral code that indicates the percentage of nitrogen, phosphate, and potash. A common garden fertilizer labeled 10-10-10 contains 10% of each of the three plant nutrients. Most garden centers sell fertilizer blends (10-10-10) rather than single nutrient fertilizers like 20-0-0 or 0-0-60 which are available from fertilizer dealers. Because there are a limited number of fertilizer blends on the market you may not find one that exactly meets the ratio recommended (reported on the front side). In this case, you should select a fertilizer blend with the closest ratio of N-P2O5-K2O to that recommended.

Since meeting the exact amount required for each nutrient will not be possible in all cases, it's most important to match the Nitrogen (N) required. The amount of fertilizer to apply that will give the recommended amount of nitrogen can be obtained from the following table:

Table to Determine Total Amount of Fertilizer to Apply Based on Actual Nitrogen Recommended:

	Nitrogen Recommended			
Fertilizer Nitrogen % (First number of fertilizer grade on bag)	0.1 lb. N/100 sq. ft	0.15 lb. N/100 sq ft	0.2 lb. N/100 sq. ft	1.0 lb. N/1000 sq. ft
	Total lbs. fertilizer to apply / 100 sq. ft			Total lbs. fertilizer to apply/1000 sq. ft
45	0.22	0.33	0.44	2.2
37	0.27	0.40	0.54	2.7
36	0.28	0.42	0.56	2.8
33	0.30	0.45	0.60	3.0
32	0.31	0.46	0.62	3.1
30	0.33	0.50	0.66	3.3
28	0.36	0.54	0.72	3.6
27	0.37	0.56	0.74	3.7
25	0.40	0.60	0.80	4.0
24	0.42	0.63	0.84	4.2
22	0.45	0.68	0.90	4.5
21	0.48	0.72	0.96	4.8
20	0.50	0.75	1.00	5.0
19	0.53	0.80	1.06	5.3
18	0.56	0.84	1.12	5.6
16	0.63	0.95	1.26	6.3
15	0.67	1.00	1.34	6.7
13	0.77	1.15	1.54	7.7
12	0.83	1.25	1.66	8.3
10	1.00	1.50	2.00	10.0
8	1.25	1.88	2.50	12.5
6	1.67	2.50	3.34	16.7
5	2.00	3.00	4.00	20.0

Example: If the N (nitrogen) recommendation is for 0.1 lb. N/100 ft. sq. and the fertilizer grade you selected has a ratio of 18-6-12 (column 1), you will have to apply 0.56 lbs of this fertilizer (from column 2) for each 0.1 lb. N recommended per 100 square feet.

Note: 2 cups (1 pint) of dry fertilizer weighs about 1 pound.

General Information

For Home Lawns: follow these rules when applying fertilizer:
1) use a formula designed for lawns (not trees, flower beds or farms).
2) apply fertilizer during the spring and late summer (do not fertilize frozen ground).
3) apply fertilizer uniformly in two directions with a mechanical spreader.
4) sweep up any fertilizer accidentally applied on sidewalks and driveways to prevent its movement to storm sewers, lakes and streams.
5) water the lawn thoroughly after fertilizing to dissolve the nutrients and force them down to the soil surface to combine with the soil.

For Vegetable and Flower Gardens:
Manure, compost, or other forms of organic matter may be added. These amendments provide a good source of trace nutrients as well as improve soil granulation. Three to five bushels of manure or compost per 100 square feet are recommended.