UNIVERSITY OF MINNESOTA

Soil Testing Laboratory

REED WAHLBERG
2199 MORTON RD
WAYZATA, MN 55391

SOIL TEST REPORT

Lawn and Garden

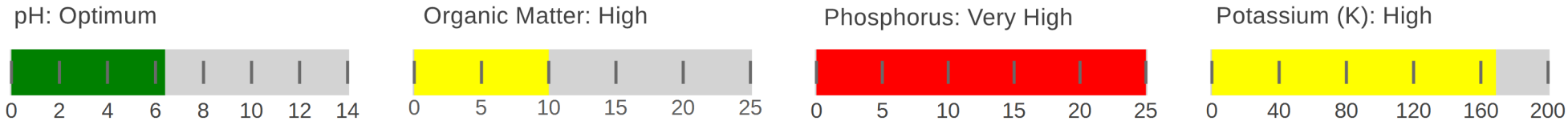
Department of Soil, Water, and Climate
Minnesota Extension Service
Agricultural Experiment Station

Report Number: 88980
Lab Number: 174499
County: Hennepin
Date Received: 3/11/2024
Report Date: 3/19/2024

SAMPLE NAME: WAHL2257

Estimated Soil Texture	Organic Matter %	Soluble Salts mS/cm	pH		Nitrate NO3-N ppm		Bray 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
Coarse	**10.0**		**6.4**				**67**	**169**									

INTERPRETATION OF SOIL TEST RESULTS



Recommendations for: Vegetable Garden

Lime Recommendation	Nitrogen Recommendation	Phosphate Recommendation	Potash Recommendation
0 #ENP/A	0.15 Lbs / 100 sq. ft.	0 Lbs / 100 sq. ft.	0.1 Lbs / 100 sq. ft.

The approximate ratio or proportion of these nutrients is: 3-0-2.

Many garden vegetable crops have different liming needs. Please consult with University Extension for specific recommendations.

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 the fertilizer calculator found at soiltest.cfans.umn.edu/other-resources. Since meeting the exact amount required for each nutrient will not be possible in some cases, it is best to apply the amount of nitrogen required and compromise some for phosphate and potash.

Fertilizers containing phosphate and potash may be applied in spring or fall by incorporating into the top 4-6" of the soil. If a fertilizer containing only nitrogen is used, it should be applied in spring by tilling or raking it into the surface. Reduce the nitrogen rate by half on peat or muck soils.

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 ½ lb. (about one cup) of 34-0-0 fertilizer. Thoroughly water fertilizer into the soil.

If only potash is recommended and the recommendation is 0.3 lb. per 100 sq. ft. or less, it may not be practical to apply this low amount. An alternative would be to double this suggested amount and apply in alternate years.

Understanding your Soil Test Report

Graphical information is provided as an intuitive visual guide. Categories of several basic components of the Regular Series Soil Test are Very Low, Low, Medium (or Optimal), High, or Very High. Very Low or Very High measurements indicated by red bars are not necessarily BAD, but are intended to call attention to those situations. For example, some plants (i.e. blueberries) thrive in Very Low pH conditions; Or if your soil is Very High in phosphorus, you should take care to prevent erosion or other mechanisms that could carry the soil into ditches or surface waters.

Regular Series

Estimated Soil Texture – Relative size of soil particles helps determine the ability of a soil to store and provide nutrients, as well as playing a role in water-holding capacity, drainage, and tilth ("workability") of the soil.

Organic Matter – The percentage, by weight, of soil organic matter helps control soil structure, drainage, aeration, and water-holding capacity. Organic matter can supply nutrients for plant growth and energy for soil-dwelling organisms. In the Regular Series test, Organic Matter is used to estimate the amount of nitrogen available for plant growth.

Soil pH – Soil pH is a measurement of acidity, which controls the availability of several plant nutrients and the activity of soil microorganisms. Optimum soil pH is generally between 6.0 and 7.0, but specialty crops such as azaleas and blueberries prefer more acidic (lower pH) conditions.

Phosphorus – Most commonly in Minnesota, Bray-1 Phosphorus represents the amount of phosphorus available for plant uptake. At pH > 7.4, the Olsen Phosphorus test is used. The two tests are not interchangeable! Phosphorus is important for cell division and development of new tissue. Phosphorus is also associated with complex energy transformations in the plant. Adding phosphorus to soil low in available phosphorus promotes root growth and winter hardiness, stimulates tillering, and often hastens maturity.

Potassium – Soil Potassium is important for photosynthesis and biochemical reactions in plants. Potassium is also responsible for vital processes such as water and nutrient transport within the plant, and protein, and starch synthesis.

Recommendations

Lime – When soil pH is lower than optimum for plant growth, a Buffer Index test is used to determine the amount of lime needed to raise the pH to a more optimal level. The Buffer Index is used only for determining lime requirements, and should not be confused with Soil pH measurement.

Nitrogen, Phosphate, and Potash – The three primary macronutrients supplied by fertilizers are Nitrogen, Phosphorus, and Potassium, and are represented on fertilizer containers as Nitrogen, Phosphate (P_2O_5), and Potash (K_2O). Fertilizer blends and availability vary greatly, so you may have difficulty finding the exact ratio recommended on your report. If you cannot find a fertilizer blend with the exact ratio recommended on your report, it is generally best practice to apply the recommended amount of nitrogen and compromise (as necessary) to get as close as you can with the phosphate and potash. Please see the FERTILIZER CALCULATORS (https://soiltest.cfans.umn.edu/other-resources) linked on our website, which can help you select the most effective and economical fertilizer for your needs.

Special Tests

Soluble Salts – This test is a check for excess salts which are commonly found along roadways or in "black dirt" used as fill or in new landscaping. Excess salts can be harmful to lawns and other plants. If salts are High or Very High, leaching by intense watering may be necessary before plants will grow normally.

Lead – Testing for Lead is recommended for sand boxes or garden soil near older buildings where children may be repeatedly exposed to lead paint.

Other Special Tests – Interpretations for other Special Tests are not provided because they are limited to special situations. These tests are targeted toward professionals and are applicable when deficiency symptoms are suspected or have been identified.

Fertilizing

For Home Lawns:

1. Use a formula designed for lawns, not trees, flower beds, or agronomic applications.
2. Apply fertilizer from spring to early summer, or from late summer to mid-fall. Do not apply to frozen ground.
3. Apply fertilizer in two directions with a mechanical spreader.
4. Sweep up any excess fertilizer from roads, sidewalks, or driveways to keep it from entering surface waters and causing algal blooms and other problems.
5. Water the lawn gently but thoroughly after fertilizing to dissolve the material and help incorporate it into the soil. Watering before a rain event also works, but make sure it is not anticipated to be an intense rain of more than 1.0 inch.

For Flower and Vegetable Gardens:

1. In addition or substitution to chemical fertilizers, compost, manure, or other forms of organic matter may be added.
2. Compost, manure, and other forms of organic matter often provide micronutrients and improve the tilth ("workability") of the soil.
3. 3-5 bushels of manure or compost are recommended for every 100 square feet of garden space.

For additional support and information, please see the following resources:

U of MN Soil Testing website: z.umn.edu/soiltest and click the Understanding Your Report tab.

University Extension: z.umn.edu/yard-and-garden. Also available at 612-301-7590.