738.011

**REPORT TO:** 11497
JOHN DEERE LANDSCAPES 497
385 CROSS POINT PKWY #100
AMHERST, NY 14068

# TURF AND ORNAMENTAL
# SOIL TEST AND RECOMMENDATION REPORT

**SUBMITTED BY/FOR:** CJ KRANTZ

792724

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| REPORT REF. NUMBER | RESULTS OF ANALYSIS | | | | | | CALCULATED VALUES | | | | | | RESULTS OF ANALYSIS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Soil | Buffer | Pounds per Acre Available Nutrient | | | | Cation Exchange Capacity | % Base Saturation | | | | | Pounds per Acre Available Nutrient | | | | OM3 % | | | | |
| | LAB NO. | pH | pH | P | K | Ca | Mg | | K | Ca | Mg | H | Na | Fe | Mn | Zn | Cu | | | | | |
| 1 | 11Z | 7.5 | | 98 | 484 | 4920 | 494 | 15.0 | 4.1 | 82 | 14 | | | | | | | 10.1 | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | AVERAGE RESULTS → | | | 98 | 484 | 4920 | 494 | 15.0 | 4.1 | 82 | 14 | | | | | | | 10.1 | | | | |

**DISPLAY OF AVERAGE RESULTS**

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SURPLUS | | | | | | | | | | | | | | | | | | | |
| HIGH | * | * * | | | | | * | | | | | | | | * | | | | |
| ADEQUATE | * * * | * * * | * * | * * | * | * | * * * | * | | | | | | | * * * | | | | |
| LOW | * * * | * * * | * * * | * * * | * * * | * * * | * * * | * * * | | | | | | | * * * | | | | |

| REPORT REF. NUMBER | SAMPLE INFORMATION | | | | FERTILIZER RECOMMENDATIONS IN LBS. PER | | | | | | | | | NO RECOMMENDATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE IDENTIFICATION | PLANT TYPE | AREA TYPE | FERT/ MAINT. LEVEL | LIME LBS/M | LIME TYPE | NITROGEN | APP. FREQ | $P_2O_5$ | $K_2O$ | Mg | | | COMMENTS |
| 1 | PEAT MOSS BLEND | NO PLANT GIVEN | RESID. LAWN | LOW | | | 0.0 -0.0 | S | 0.0 | 0.0 | | | | See All |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | RECOMMENDATIONS FOR AVERAGE RESULTS → | | | | | | 0.0 -0.0 | S | 0.0 | 0.0 | | | | See All |

SEE COMMENTS ON REVERSE SIDE

# UNDERSTANDING YOUR SOIL TEST REPORT

## SOIL TEST RESULTS

**SOIL pH:** A measure of active acidity or alkalinity in a soil/water slurry. pH 7.0 is neutral, pH <7.0 is acidic and pH >7.0 is alkaline. Most turf and ornamentals prefer a pH of 6.5-7.5. Certain acid-loving plants prefer a pH <6.0.

**BUFFER pH:** A measure of the soil's ability to acidify a buffered solution. Used to determine the resistance to change in pH (acidic buffer capacity), when the soil pH is below 6.3. The buffer pH (not soil pH) is used determine the lime requirement in most soils.

**PHOSPHORUS (P):** A measure of the available phosphorus (Bray 1) expressed in pounds per acre.

**POTASSIUM (K):** A measure of the available (exchangeable) potassium expressed in pounds per acre.

**CALCIUM (Ca) and MAGNESIUM (Mg):** A measure of the available (exchangeable) calcium and magnesium. Optimum soil test levels may vary depending on the cation exchange capacity and percent base saturation.

**CATION EXCHANGE CAPACITY (CEC):** A calculated value used to determine the relative nutrient holding capacity of the soil for the cations $K^+$, $Ca^{++}$, $Mg^{++}$, $H^+$ (hydrogen) & $Na^+$ (sodium), if a sodium test is requested. CEC values are expressed as milliequivalents per 100 grams (meq/100) of soil. Exchangeable cations determined using neutral (pH 7.0) 1M ammonium acetate.

| Typical CEC Ranges | Soil Texture | Relative Nutrient Holding Capacity CEC |
|---|---|---|
| 0-12 | Coarse (sandy) | Very Low < 5 |
| 8-25 | Medium (loamy) | Low < 10 |
| 22-40+ | Fine (clayey)* | Medium 10-22 |
| 30-50+ | Organic | High > 22 |

* Certain types of clay soils have lower CEC ranging from 3 to 12.

**PERCENT BASE SATURATION:** Calculated values showing the percentage of the CEC occupied by each tested cation. Most turfgrasses and ornamentals perform best when the cations are in balance in the ranges shown below:

| | | | |
|---|---|---|---|
| POTASSIUM | **- K** | **2-7%** | |
| CALCIUM | **- Ca** | **65-85%** | |
| MAGNESIUM | **- Mg** | **10-20%** | |
| HYDROGEN | **- H** | **0-5%*** | (when present) |
| SODIUM | **- Na** | **0-5%** | (when tested) |

* Higher hydrogen saturations (5-25%) may be acceptable for certain acid-loving plants. Calculated base saturations and CEC may be lower than normal when hydrogen saturation exceeds 20%.

## ANALYTICAL RESULTS

**MICRO & SECONDARY NUTRIENTS:** Available micro and secondary nutrients can be interpreted according to the table below. Response to available micro and secondary nutrients may differ according to turf or ornamental plant type.

| RELATIVE VALUE | IRON (Fe) | MANGANESE (Mn) | ZINC (Zn) | COPPER (Cu) | BORON (B) | SULFUR (S) |
|---|---|---|---|---|---|---|
| | lbs./acre | | | | | |
| LOW | <15 | <10 | <2 | <0.5 | <0.5 | <20 |
| MEDIUM | 15-120 | 10-50 | 2-5 | 0.5-5.0 | 0.5-3.0 | 20-80 |
| HIGH | >120 | >50 | >5 | >5.0 | >3.0 | >80 |

**ORGANIC MATTER (OM3):** An estimate of the organic matter content of the soil reported as percent by weight. Organic matter is determined by combustion at 440°C using United States Golf Assoc. methods.

**SOLUBLE SALTS (SS):** A measure of the salt concentration in the soil from both fertilizer and non-fertilizer sources.

| Potential for Plant Injury | Soluble Salts (mhos X $10^{-3}$) |
|---|---|
| VERY LOW | < 25 |
| LOW | 26-100 |
| MEDIUM (Sensitive plants may be injured) | 101-200 |
| HIGH | 201-300 |
| VERY HIGH (Most plants injured) | > 300 |

**DISPLAY OF AVERAGE RESULTS:** Line 11 on the report shows the average value for the tested nutrient. The average value for each nutrient is displayed graphically in the center section of the report. This provides an easy to interpret guide to the nutrient status of the soil.

**NOTES:**

1. Optimum levels of plant nutrients vary with plant type, its use and fertility management level. These factors along with soil test information are used to make specific fertilizer recommendations.
2. To convert pounds of nutrient per acre to parts per million divide reported values by 2.
3. To convert soluble salt values to millimohs (mmohs) divide reported values by 100.
4. Results followed by a "+" are outside the normal test range. Actual values are higher than shown and can be determined upon request.

## LIME AND FERTILIZER RECOMMENDATION COMMENTS

**CAUTION!** To avoid plant injury consult a professional in the turf and ornamentals industry or your County Cooperative Extension Service before using recommended fertilizers or lime.

**ALL RECOMMENDATIONS** represent a typical amount for the plant type, its use and fertility management level as determined by the sample information provided and the soil test results. Actual fertility management may vary with different cultural practices, i.e. rate and timing of application, nutrient source, application method, etc.

**LIME RECOMMENDATIONS** are given in pounds per 1,000 sq. ft. (LBS/M) or tons per acre (TON/A) of ground limestone (TNP>90%). Recommendations are for the amount needed to correct acid soil conditions for the specific plant types. Do not over apply lime to established turf areas. Incorporate recommended amounts into the root zone at establishment.

**LIME TYPE:** When calcium and magnesium tests are performed, the lime type recommended will be indicated as high calcium **(Ca)** or high magnesium/dolomitic lime **(Mg).**

**NITROGEN RECOMMENDATIONS** are given in lbs. per 1,000 sq. ft. or lbs. per acre of actual nitrogen **(N). APP. FREQ:** Recommendations for application frequency given on a per season **(S)** basis should be split into multiple applications. Recommendations may also be given on a per month **(M)** of growing season or month of establishment basis. When **NEW/ESTB.** is selected as the fertility management level, nutrient recommendations are for incorporation into the soil at the time of planting (preferred) or for surface application during the first three months or more of establishment.

**PHOSPHATE RECOMMENDATIONS** are given in lbs. per 1,000 sq. ft. or lbs. per acre of $P_2O_5$. Recommendations are given as the annual requirement for maintenance, if soil test values are medium to high; the corrective amount, if soil test values are low; or the amount to be used during the establishment phase.

**POTASSIUM RECOMMENDATIONS** are given in lbs. per 1,000 sq. ft. or lbs. per acre of $K_2O$. Recommendations are given as the annual requirement for maintenance, if soil test values are medium to high; the corrective amount, if soil test values are low; or the amount to be used during the establishment phase.

**OTHER NUTRIENT RECOMMENDATIONS** are given in lbs. per 1,000 sq. ft. or lbs. per acre of elemental magnesium **(Mg)**, iron **(Fe)**, manganese **(Mn)**, or zinc **(Zn)**. Recommendations are given as the corrective amount for maintenance or the amount to be used during the establishment phase. Do not over apply micronutrients.