

## Soil Test Report Lab #: 2018-66800

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**Sample ID:** MU-10

**Date Received:** 2018-03-30

**Date Reported:** 2018-04-08

**Serial #:** BR-4853

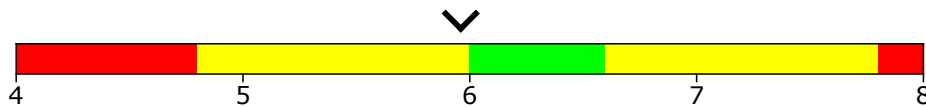
**Referred To:** Rutgers Cooperative Ext. of Bergen County  
(201)336-6788

**Crop or Plant**

NewTurfgrass, cool season

### Results and Interpretations

**pH:** 5.96 Moderately acidic; below optimum for many plants but tolerated by acid-loving species.



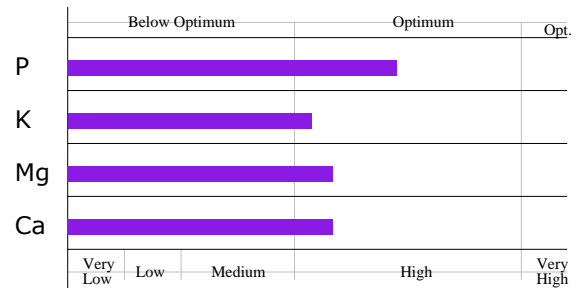
**Lime Requirement Index:** 7.42

The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared to soil with high buffering capacity (LRI near 7.0).

### Macronutrients (pounds per acre)

by Mehlich 3 extraction

**Phosphorus:** 101 (Optimum)  
**Potassium:** 155 (Optimum)  
**Magnesium:** 169 (Optimum)  
**Calcium:** 1468 (Optimum)



### Micronutrients (parts per million)

<b>Zinc(Zn)</b> 18.10 (Adequate)	<b>Copper(Cu)</b> 3.80 (Adequate)	<b>Manganese(Mn)</b> 23.30 (Adequate)	<b>Boron(B)</b> 0.61 (Low)	<b>Iron(Fe)</b> 142.20 (High)
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### Special Tests Results

No special test data available

## **pH, Calcium, and Magnesium Recommendations**

The soil pH is below the optimum range of 6.00 to 6.60 for the growth of most Turfgrass, cool season.

To optimize the soil condition, it should be treated with 35 pounds per 1000 square feet using calcitic limestone. For new plantings this may be applied in a single operation spread uniformly on the surface, then mixed thoroughly to a 6 inch depth by shovel or tilling. Do not apply more than the recommended amount until the soil is tested again.

## **Fertilizer Recommendations**

Reported management conditions: Light-Full Sun Irrigation-Weekly Clippings-Recycled

LATE SUMMER OR EARLY FALL is the best time to establish cool-season grasses. EARLY SPRING establishment can also be successful but is riskier and may require more input of effort and resources. N.J. law prohibits application of fertilizer containing nitrogen or phosphorus after November 15 (December 1 for professional certified applicators) and before March 1.

Target ratio for fertilizer product is: 1-2-2, which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as  $P_2O_5$ , and potassium as  $K_2O$ .

The estimated yearly nitrogen (N) need of this new seeding/sodding is 1 pound per 1000 square feet. New plantings allow mixing of the fertilizer into the soil to build up root zone fertility before planting.

DO THIS: Uniformly apply fertilizer(s) with N:P:K ratio indicated above to achieve 0.9 pound Nitrogen per 1000 square feet, and mix into soil depth of 4 inches.

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TWO to FOUR WEEKS AFTER EMERGENCE of seedlings or placing sod, additional fertilizer is recommended to promote rapid establishment. If seeding/sodding in spring, this application should be repeated in September and October, at least 5 weeks apart; or for sandy soils, split applications into half-rate and apply four times, 3 weeks apart.

Rutgers Cooperative Extension encourages use of fertilizers having a water-insoluble nitrogen (WIN) component as specified on the label. WIN serves as a slow, extended release source of nitrogen. A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer just prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

DO THIS: Using a 2:1:1 fertilizer, apply 0.75 pound Nitrogen per 1000 square feet spread uniformly over the turf.

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WHAT ABOUT NEXT YEAR? In the 2nd year of establishment, two periods of fertilization are suggested: 1) April, and 2) September. Avoid applying fertilizer during very hot, very dry weather. For sandy soils, it is also suggested that each application be split into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss.

The fertilizer prescription above is intended to bring soil nutrients to optimal or near-optimal conditions, and subsequent management recommendations are intended to maintain soil nutrients levels near optimum. A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

The best nutrient ratio for maintenance fertilization of the turf beyond 2 years is best determined by another soil test.

DO THIS: return grass clippings to the Turfgrass when mowing to recycle nutrients. Use fertilizer with N:P:K ratio of: 1:0:0 (nitrogen only) or 4:0:1 or 2:0:1 or 1:0:1 (representing increasing amounts of potassium; doses of potassium may be necessary for sandy, low organic matter soils) to achieve 0.75 pound Nitrogen per 1000 square feet.

### ***How do I find the proper fertilizer product?***

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: [rci.rutgers.edu/~soilslab/FertProducts/](http://rci.rutgers.edu/~soilslab/FertProducts/). The website lists commercially available products according to their nutrient analyses to assist you with product selection and calculation of amount required.

Select a fertilizer that has a nutrient grade (also known as guaranteed minimum analysis) the same as or a multiple of the values recommended, or select a close match to that ratio. When no single fertilizer product matches or approximates the recommended N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O nutrient ratio, it will be necessary to use two or more fertilizers to reach the correct balance of nutrients. The proper amount of fertilizer to apply in a single application depends on the actual fertilizer grade of the fertilizer product selected, the total area (square feet) to be treated, and the total number of fertilizer applications to be made throughout the year.

### **Micronutrient Statements**

Zinc does not appear to be a limiting factor. For information about zinc in soil for plant nutrition, see FS721.

Copper does not appear to be a limiting factor. As with most other micronutrients, copper availability is related to soil pH. Do not over-lime. For more information about soil copper, see FS720.

Manganese does not appear to be a limiting factor. Maintain soil pH in the optimum range, as directed in "Recommendations". See FS973 for more information about manganese in soil and plant nutrition.

Plant types differ in their susceptibility to boron deficiency; certain fruit, vegetable, and field crops are most susceptible. Symptoms include improper development or dieback of growing tips, poor flowering or fruit set, twisting and yellowing of young leaves from base to tip, and black heart of roots. Lime only as necessary, since pH above 7.0 limits boron availability. Building up organic matter content of soil will increase boron availability. Use of boron fertilizer must be done only with extreme care because of the toxicity that might occur if over-applied and the difficulty of applying the low rates necessary. See FS873 for more information and follow recommendations above.

Plant availability to iron is highly dependent on soil pH. Although soil iron appears plentiful, high soil pH could limit its availability. On the other hand, plant damage due to iron toxicity, though not common, could occur at low soil pH (acidic soil). Maintain soil pH in the optimum range as described in Recommendations. See FS971 for more information.

### **Comments:**

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