

Soil Test Report
Lab #: 2024-14736

Date Received: 2024-01-10

Date Reported: 2024-01-25

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

Crop or Plant

New Ornamental flowers, perennial (primary)

New Ornamental shrubs and small trees, non-acid-loving (secondary)

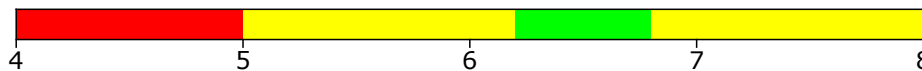
Sample ID: CF 1-7-24

Results and Interpretations

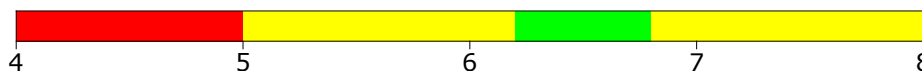
Sandy Loam

pH: 6.30 Slightly acidic; optimum pH range of many plants except acid-loving species.

Primary Crop



Secondary Crop



Lime Requirement Index: 7.12

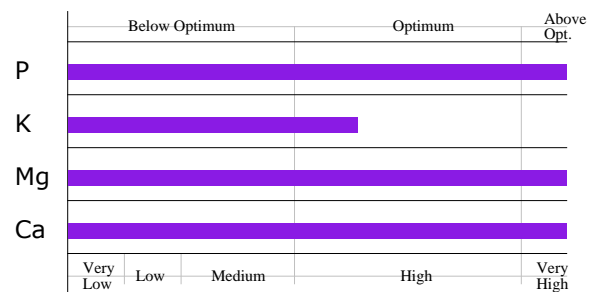
The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared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

Macronutrients (pounds per acre)

by Mehlich 3 extraction

Phosphorus: 697 (Above Optimum)
Potassium: 182 (Optimum)
Magnesium: 1153 (Above Optimum)
Calcium: * (Above Optimum)

* Excessive, out of calibration range



Micronutrients (parts per million)

Zinc(Zn)	Copper(Cu)	Manganese(Mn)	Boron(B)	Iron(Fe)	Sulfur(S)
38.47 (Adequate)	3.28 (Adequate)	5.02 (Adequate)	1.38 (Adequate)	251.01 (High)	18.01 (Sufficient)

Special Tests Results

Visual Description:

Moist Color: Black. As received: Moist, Loose + Aggregated (friable), Fine-loamy Material with high content of humified Organic Matter. Coarse rock fragments: Few (less than 1/4-inch). Organic detritus: Few Fine Roots, Stem fragments. Undesirable inclusion: Refuse (fragment of fabric).

Soluble Salts- Electrical conductivity= 0.18 mmho/cm

(Satisfactory)

Organic matter by loss on ignition- Organic Matter= 26.6%

Very High for Sandy Loam

Gravel Content- Larger than 2mm: 4.9%

Mechanical Analysis- Sand= 73% Silt=18% Clay= 9% Texture: Sandy Loam

Mechanical analysis test method is suitably accurate for soils with organic matter content less than 5%. For materials with more than 5% organic matter, calculated percentages of sand, silt, and clay will be increasingly inaccurate.

pH, Calcium, and Magnesium Recommendations

Primary Crop - New Ornamental flowers, perennial

The soil pH is in the optimum range of 6.20 to 6.80 for the growth of most Ornamental flowers, perennial. Do not apply any limestone.

Secondary Crop - New Ornamental shrubs and small trees, non-acid-loving

The soil pH is in the optimum range of 6.20 to 6.80 for the growth of most Ornamental shrubs and small trees, non-acid-loving. Do not apply any limestone.

Fertilizer Recommendations

Primary Crop - New Ornamental flowers, perennial

BEFORE PLANTING

Target ratio for fertilizer product is: 2:0:1, which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as P₂O₅, and potassium as K₂O.

DO THIS: using a fertilizer with the N:P:K ratio indicated, broadcast the perennial bed at a rate to achieve 2 pound Nitrogen per 1000 square feet. Mix well to 6-inch depth of soil before transplanting.

For heavy feeders only: TWO WEEKS BEFORE BLOOM, at midseason of plants' growth. Do not fertilizer after August 1.

While many perennials perform best with minimal fertilization, some perennials are heavy feeders (for example, peony and chrysanthemum) and will perform better with a second application of fertilizer. Very sandy soils are susceptible to

leaching and so might also warrant a second application after high rainfall totals if not using slow-release products.

DO THIS: For heavy feeding perennials, topdress using a fertilizer with N:P:K ratio of 4-1-1 to achieve a Nitrogen application of 1 pound per 1000 square feet.

WHAT ABOUT NEXT YEAR?

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

DO THIS: In spring as new shoots of perennials emerge, broadcast fertilizer with N:P:K ratio of 4:1:2 at a rate to achieve 1 pound Nitrogen per 1000 square feet. Where available, use a slow release fertilizer product for season-long effectiveness and minimal loss to leaching. Water lightly to rinse fertilizer from plant shoots and into soil.

Secondary Crop - New Ornamental shrubs and small trees, non-acid-loving

BEFORE PLANTING

Target ratio for fertilizer product is: 2:0:1, which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as P₂O₅, and potassium as K₂O.

Nitrogen requirement is 2 pounds per 1000 square feet (or, equivalent to 0.2 pound per 100 square feet). New plantings provide opportunity to amend the whole root zone of soil for long term fertility and tilth; subsequent management for established plantings will be limited to surface applications.

DO THIS: Broadcast a fertilizer with the indicated N:P:K ratio at a rate to achieve the desired Nitrogen requirement, and mix into the surface 6- to 8-inches. On soils that are low in organic matter or in poor tilth, amend with 4 to 5 cubic feet of organic matter, such as peat moss or compost, for each 100 square feet of area. Blend into the soil. Do not include dry fertilizer in the backfill hole; young, tender roots are especially susceptible to tissue burn. Delay surface fertilization until after the first growing season.

WHAT ABOUT NEXT YEAR?

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. The best nutrient ratio for maintenance fertilization of the ornamental shrubs and small trees beyond 2 years is best determined by another soil test.

DO THIS: Broadcast a fertilizer with 2-1-1 ratio of N:P:K at a rate to achieve 1 pound Nitrogen per 1000 square feet (or/equivalent to 0.1 pound Nitrogen per 100 square feet) on the soil surface. Rake to improve contact with soil and water lightly.

How do I find the proper fertilizer product?

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: <https://itsappserver.sebs.rutgers.edu/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:P₂O₅:K₂O 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.

Boron would not be a limiting factor for most plants. Plant types differ in their requirement for boron, however; certain fruit, vegetables, and field crops have greater need for boron (up to 0.75 ppm). For more information, see FS873.

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.

Although soil tests for sulfur fertility must be interpreted with many considerations in mind, the soil appears to be within an optimum range of sulfur availability within the soil depth sampled at the time the sample was taken. Response to sulfur fertilization is unlikely at this time. Organic matter decomposition is the natural source of plant-available soil sulfur (sulfate ion). Sulfate availability to plants may be time-dependent, depending on soil temperatures, microbial activity, and potential leaching losses – especially in sandy soils. Certain crops that have a high requirement for sulfur [agronomic crops, legumes, and vegetables in the Brassicaceae (cabbage) family or Allium (onion) genus] may benefit from sulfur amendment later in the season to maintain production/crop quality, though established deep-rooted plants may have access to sulfur in subsoil/depths greater than the sample taken; a separate sample from the subsoil would help assess need for added S. For long-term fertility, use best management practices to maintain adequate organic matter content in soil. For additional information on sulfur fertility, see Rutgers Cooperative Extension bulletin E365.

Comments:

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