To

Joe Smith
2390 Mowry Rd
Gainesville FL, 32611

UF UNIVERSITY of FLORIDA IFAS

UF/IFAS Analytical Services Laboratories
UF/IFAS Extension Soil Testing Laboratory
2390 Mowry Road Wallace Building 631 PO Box 110740 Gainesville, FL 32611-0740
Email: soilslab@ifas.ufl.edu Web: soilslab.ifas.ufl.edu
Phone #:352-392-1950

Landscape And Vegetable Garden Test Report

To:
Joe Smith
2390 Mowry Rd
Gainesville FL, 32611

For more information contact:
Atkinson, Michelle
Manatee County Coop Extn Service
1303 17 St W.
Palmetto FL, 34221-2934
Tel: 941-722-4524

Client Identification: 1 Lt Side Set Number: E65614 Lab Number: E166796
Crop: **Zoysiagrass Lawn**

Report Date: 25-May-21

Soil Test Results and Their Interpretations

Target pH: 6.5 This is the pH at which the above crop will grow at its optimum
pH (1:2 Sample:Water): 6.4 This is the pH of your sample in water medium
A-E Buffer Value: N/A Buffer pH is the pH of your soil in Adams-Evans Buffer(A-E Buffer). This is done to determine the lime requirement, which will help increase the soil pH to the target pH level desired by the crop. If the pH is higher than Target pH, Buffer pH will not be determined

Soil Nutrients Mehlich-3 Extractable

Nutrients	Level mg/kg or ppm	Interpretation	Nutrients	Level mg/kg or ppm	
Phosphorus (P)	**25**	**LOW**	**Sulfur** (S)	**56.0**	} ***For these nutrients see directions on the following pages**
Potassium (K)	**22**	**LOW**	**Copper** (Cu)	**1.7**	
Magnesium (Mg)	**151**	**HIGH**	**Manganese** (Mn)	**7.6**	
			Zinc (Zn)	**5.5**	
Calcium (Ca)	**961**	**Ca is typically adequate in Florida soils**			

Lime and Fertilizer Recommendations

Crop: Zoysiagrass Lawn

Lime:	**0.00**	**lbs per 1000 sq. ft. per year**
Nitrogen(N):	**2.50**	**lbs per 1000 sq. ft. per year**
Phosphorus(P_2O_5):	**0.50**	**lbs per 1000 sq. ft. per year**
Potassium(K_2O):	**2.00**	**lbs per 1000 sq. ft. per year**
Magnesium(Mg):	**0.00**	**lbs per 1000 sq. ft. per year**

We do not test soil for N as there is no meaningful soil test for predicting N availability. Thus, the N recommendation was developed from research that measured response of the indicated crop to applied N fertilizer. If you expect significant nutrient release from organic sources such as crop residues or organic amendments, estimate the amount mineralized and subtract that amount from the fertilizer recommendations given below to arrive at crop needs.

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Directions

Sample Number: 166796 **Crop: Zoysiagrass Lawn**

General

- For details on fertilization, obtain UF/IFAS publication SL21, "General recommendations for Fertilization of Turfgrasses on Florida Soils." The publication is available on the web at http://edis.ifas.ufl.edu/pdffiles/LH/LH01400.pdf or from county Extension offices.
  These rates are for normal, healthy lawns. These rates may be doubled in certain regions of the state for high maintenance turf.
  Divide annual rates into 2 to 8 applications depending on location and management levels. Apply no more than 1.0 lb N/1000 sq. ft. per application.
  Available Phosphate: A maximum rate of 0.25 lb per 1000 sq. ft per application, not to exceed 0.5 lb per 1000 sq. ft. annually.

Lime Requirement

- Recommendations are based on the Adams-Evans lime requirement test which is run on all mineral soils. When the recommended amount of lime is incorporated in the surface 6 inches of soil, soil pH should adjust to a level above which additional liming benefit is not expected. Excessive applications of lime can result in nutritional disorders.

Sulfur

- Application of sulfur is not required if test value is greater than 6.0 mg/kg or ppm. If the soil test value is less than
  6.0 mg/kg or ppm apply sulfur as shown below:
  Fertilizer should contain 15 to 20 lb sulfur/A. Apply as a sulfate (eg. gypsum, ammonium sulfate, magnesium sulfate, potassium sulfate, potassium magnesium sulfate), since elemental sulfur will react too slowly to supply the sulfur needs of the current crop.

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Palmetto FL, 34221-2934
Tel: 941-722-4524

Set Number: E65614 Lab Number: E166797

Client Identification: 2 Bk Lt
Crop: **Zoysiagrass Lawn**

Report Date: 25-May-21

Soil Test Results and Their Interpretations

Target pH: 6.5 This is the pH at which the above crop will grow at its optimum
pH (1:2 Sample:Water): 6.8 This is the pH of your sample in water medium
A-E Buffer Value: N/A Buffer pH is the pH of your soil in Adams-Evans Buffer(A-E Buffer). This is done to determine the lime requirement, which will help increase the soil pH to the target pH level desired by the crop. If the pH is higher than Target pH, Buffer pH will not be determined

Soil Nutrients Mehlich-3 Extractable

Nutrients	Level mg/kg or ppm	Interpretation	Nutrients	Level mg/kg or ppm	
Phosphorus (P)	**105**	**HIGH**	**Sulfur** (S)	**40.7**	} ***For these nutrients see directions on the following pages**
Potassium (K)	**20**	**LOW**	**Copper** (Cu)	**2.1**	
Magnesium (Mg)	**189**	**HIGH**	**Manganese** (Mn)	**8.2**	
			Zinc (Zn)	**6.0**	
Calcium (Ca)	**1212**	**Ca is typically adequate in Florida soils**			

Lime and Fertilizer Recommendations

Crop: Zoysiagrass Lawn

Lime:	**0.00**	**lbs per 1000 sq. ft. per year**
Nitrogen(N):	**2.50**	**lbs per 1000 sq. ft. per year**
Phosphorus(P_2O_5):	**0.00**	**lbs per 1000 sq. ft. per year**
Potassium(K_2O):	**2.00**	**lbs per 1000 sq. ft. per year**
Magnesium(Mg):	**0.00**	**lbs per 1000 sq. ft. per year**

We do not test soil for N as there is no meaningful soil test for predicting N availability. Thus, the N recommendation was developed from research that measured response of the indicated crop to applied N fertilizer. If you expect significant nutrient release from organic sources such as crop residues or organic amendments, estimate the amount mineralized and subtract that amount from the fertilizer recommendations given below to arrive at crop needs.

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Directions

Sample Number: 166797 **Crop: Zoysiagrass Lawn**

General

- For details on fertilization, obtain UF/IFAS publication SL21, "General recommendations for Fertilization of Turfgrasses on Florida Soils." The publication is available on the web at http://edis.ifas.ufl.edu/pdffiles/LH/LH01400.pdf or from county Extension offices.
  These rates are for normal, healthy lawns. These rates may be doubled in certain regions of the state for high maintenance turf.
  Divide annual rates into 2 to 8 applications depending on location and management levels. Apply no more than 1.0 lb N/1000 sq. ft. per application.
  Available Phosphate: A maximum rate of 0.25 lb per 1000 sq. ft per application, not to exceed 0.5 lb per 1000 sq. ft. annually.

Lime Requirement

- Recommendations are based on the Adams-Evans lime requirement test which is run on all mineral soils. When the recommended amount of lime is incorporated in the surface 6 inches of soil, soil pH should adjust to a level above which additional liming benefit is not expected. Excessive applications of lime can result in nutritional disorders.

Sulfur

- Application of sulfur is not required if test value is greater than 6.0 mg/kg or ppm. If the soil test value is less than
  6.0 mg/kg or ppm apply sulfur as shown below:
  Fertilizer should contain 15 to 20 lb sulfur/A. Apply as a sulfate (eg. gypsum, ammonium sulfate, magnesium sulfate, potassium sulfate, potassium magnesium sulfate), since elemental sulfur will react too slowly to supply the sulfur needs of the current crop.

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Tel: 941-722-4524

Set Number: E65614 Lab Number: E166798

Client Identification: 3 BK Center
Crop: **Zoysiagrass Lawn**

Report Date: 25-May-21

Soil Test Results and Their Interpretations

Target pH: 6.5 This is the pH at which the above crop will grow at its optimum
pH (1:2 Sample:Water): 7.1 This is the pH of your sample in water medium
A-E Buffer Value: N/A Buffer pH is the pH of your soil in Adams-Evans Buffer(A-E Buffer). This is done to determine the lime requirement, which will help increase the soil pH to the target pH level desired by the crop. If the pH is higher than Target pH, Buffer pH will not be determined

Soil Nutrients Mehlich-3 Extractable

Nutrients	Level mg/kg or ppm	Interpretation	Nutrients	Level mg/kg or ppm	
Phosphorus (P)	**50**	**HIGH**	**Sulfur** (S)	**53.2**	} ***For these nutrients see directions on the following pages**
Potassium (K)	**36**	**LOW**	**Copper** (Cu)	**1.2**	
Magnesium (Mg)	**172**	**HIGH**	**Manganese** (Mn)	**10.9**	
			Zinc (Zn)	**2.2**	
Calcium (Ca)	**972**	**Ca is typically adequate in Florida soils**			

Lime and Fertilizer Recommendations

Crop: Zoysiagrass Lawn

Lime:	**0.00**	**lbs per 1000 sq. ft. per year**
Nitrogen(N):	**2.50**	**lbs per 1000 sq. ft. per year**
Phosphorus(P_2O_5):	**0.00**	**lbs per 1000 sq. ft. per year**
Potassium(K_2O):	**2.00**	**lbs per 1000 sq. ft. per year**
Magnesium(Mg):	**0.00**	**lbs per 1000 sq. ft. per year**

We do not test soil for N as there is no meaningful soil test for predicting N availability. Thus, the N recommendation was developed from research that measured response of the indicated crop to applied N fertilizer. If you expect significant nutrient release from organic sources such as crop residues or organic amendments, estimate the amount mineralized and subtract that amount from the fertilizer recommendations given below to arrive at crop needs.

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Directions

Sample Number: 166798 **Crop: Zoysiagrass Lawn**

General

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  These rates are for normal, healthy lawns. These rates may be doubled in certain regions of the state for high maintenance turf.
  Divide annual rates into 2 to 8 applications depending on location and management levels. Apply no more than 1.0 lb N/1000 sq. ft. per application.
  Available Phosphate: A maximum rate of 0.25 lb per 1000 sq. ft per application, not to exceed 0.5 lb per 1000 sq. ft. annually.

Lime Requirement

- Recommendations are based on the Adams-Evans lime requirement test which is run on all mineral soils. When the recommended amount of lime is incorporated in the surface 6 inches of soil, soil pH should adjust to a level above which additional liming benefit is not expected. Excessive applications of lime can result in nutritional disorders.

Sulfur

- Application of sulfur is not required if test value is greater than 6.0 mg/kg or ppm. If the soil test value is less than
  6.0 mg/kg or ppm apply sulfur as shown below:
  Fertilizer should contain 15 to 20 lb sulfur/A. Apply as a sulfate (eg. gypsum, ammonium sulfate, magnesium sulfate, potassium sulfate, potassium magnesium sulfate), since elemental sulfur will react too slowly to supply the sulfur needs of the current crop.

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Tel: 941-722-4524

Set Number: E65614 Lab Number: E166799

Client Identification: 4 BK Rt
Crop: **Zoysiagrass Lawn**

Report Date: 25-May-21

Soil Test Results and Their Interpretations

Target pH: 6.5 This is the pH at which the above crop will grow at its optimum
pH (1:2 Sample:Water): 4.8 This is the pH of your sample in water medium
A-E Buffer Value:7.45 Buffer pH is the pH of your soil in Adams-Evans Buffer(A-E Buffer). This is done to determine the lime requirement, which will help increase the soil pH to the target pH level desired by the crop. If the pH is higher than Target pH, Buffer pH will not be determined

Soil Nutrients Mehlich-3 Extractable

Nutrients	Level mg/kg or ppm	Interpretation	Nutrients	Level mg/kg or ppm	
Phosphorus (P)	**137**	**HIGH**	**Sulfur** (S)	**33.7**	} ***For these nutrients see directions on the following pages**
Potassium (K)	**54**	**MEDIUM**	**Copper** (Cu)	**0.8**	
Magnesium (Mg)	**86**	**HIGH**	**Manganese** (Mn)	**7.2**	
			Zinc (Zn)	**4.5**	
Calcium (Ca)	**612**	**Ca is typically adequate in Florida soils**			

Lime and Fertilizer Recommendations

Crop: Zoysiagrass Lawn

Lime:	**75**	**lbs per 1000 sq. ft. per year**
Nitrogen(N):	**2.50**	**lbs per 1000 sq. ft. per year**
Phosphorus(P_2O_5):	**0.00**	**lbs per 1000 sq. ft. per year**
Potassium(K_2O):	**1.00**	**lbs per 1000 sq. ft. per year**
Magnesium(Mg):	**0.00**	**lbs per 1000 sq. ft. per year**

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Directions

Sample Number: 166799 **Crop: Zoysiagrass Lawn**

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  These rates are for normal, healthy lawns. These rates may be doubled in certain regions of the state for high maintenance turf.
  Divide annual rates into 2 to 8 applications depending on location and management levels. Apply no more than 1.0 lb N/1000 sq. ft. per application.
  Available Phosphate: A maximum rate of 0.25 lb per 1000 sq. ft per application, not to exceed 0.5 lb per 1000 sq. ft. annually.

Lime Requirement

- Recommendations are based on the Adams-Evans lime requirement test which is run on all mineral soils. When the recommended amount of lime is incorporated in the surface 6 inches of soil, soil pH should adjust to a level above which additional liming benefit is not expected. Excessive applications of lime can result in nutritional disorders.

Sulfur

- Application of sulfur is not required if test value is greater than 6.0 mg/kg or ppm. If the soil test value is less than
  6.0 mg/kg or ppm apply sulfur as shown below:
  Fertilizer should contain 15 to 20 lb sulfur/A. Apply as a sulfate (eg. gypsum, ammonium sulfate, magnesium sulfate, potassium sulfate, potassium magnesium sulfate), since elemental sulfur will react too slowly to supply the sulfur needs of the current crop.

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GUIDANCE ON MICRONUTRIENTS

The IFAS Extension Soil Testing Laboratory currently offers a soil test for three micronutrients, copper (Cu), manganese (Mn), and zinc (Zn). Interpretations in terms of plant needs of the particular nutrients are still quite tentative. They are presented here with the understanding that other criteria such as crop production records and observation of deficiency symptoms should be used along with the test results in reaching the management decision concerning micronutrient fertilization.

Interpretation of extractable Cu, Mn, and Zn depends on the soil pH. The critical soil levels for these nutrients increase with pH for crops grown on acid sandy soils of Florida. Micronutrient availability in the alkaline pH range is better evaluated with a plant tissue test or with soil test extractants developed especially for alkaline soils.

Indiscriminate use of micronutrient soil tests should be avoided. However, if plant performance has been less than optimum in the past and the soil test levels are below those shown in the tables, fertilization with the respective micronutrients may be indicated.

COPPER

In Florida, Cu deficiencies have been generally confined to soils high in organic matter and so-called “new ground” just coming into cultivation in the flatwood areas. Known Cu phytotoxicity occurs in citrus groves and vegetable crop areas where Cu applied in fungicides and fertilizers has accumulated in the soil over the years. Liming to pH 7.0 is the simplest means of overcoming phytotoxicity.

Table 1 provides guidelines for interpreting the IFAS Micronutrient Soil Test values for extractable Cu in mineral soils. Dilute acids are poor extractants of Cu on organic soils and do not give reliable estimates of crop responses. The IFAS Soil Testing Lab does not presently provide a Cu soil test for organic soils.

Application of 3 to 5 pounds elemental Cu per acre (as copper sulfate or finely ground copper oxide) will correct Cu deficiencies in most crops growing on mineral soils. Mixing these Cu sources with macronutrient fertilizers presents no agronomic problems, provided segregation of the materials is avoided. A single Cu application may be sufficient for several years. Do not repeat this application until soil or tissue tests indicate a need for Cu. Copper added to soil is there “forever” and Florida already has too many cases of soils with phytotoxic levels of Cu. Fertilizer Cu should not be applied to mineral soils where Cu will be used as a pesticide.

Table 1. Tentative interpretation of extractable Cu in mineral soils

	Soil pH Minerals Soils Only		
	5.5-6.0	6.0-6.5	6.5-7.0
	ppm		
Level below which there may be a crop response to applied Cu	0.1-0.3	0.3-0.5	0.5*
Level above which Cu phytotoxicity may occur	2.0-3.0	3.0-5.0	5.0**

*If in doubt about copper nutrition of crop, get a tissue test

MANGANESE

There has been some success in predicting crop response to fertilizer Mn with extractable Mn. Lack of success in some cases has resulted from the complex nature of soil Mn and the many factors that affect its uptake by plants. Levels in table 2 are suggested as a guide for interpreting extractable Mn in mineral and organic soils.

Application of 8 to 10 pounds elemental Mn (as manganese sulfate or manganese oxide) per acre in banded fertilizer is recommended when the soil test levels are below those shown in Table 2. Broadcast applications are less effective and the rate should be increased to 20 or 30 pounds Mn if the fertilizer is broadcast. Uptake of Mn is generally best when Mn is banded with acid forming fertilizers. Field crops most likely to give a yield response to applied Mn in Florida are soybeans, small grains, and irrigated corn. Sugarcane grown on organic soils having pHs above 6.5 will also respond to banded Mn fertilizer.

ZINC

Table 2 presents a guide to interpretation of extractable Zn in both mineral and organic soils. Where Zn fertilization is needed, application rates may vary considerably with crop and Zn source but generally are around 5 to 10 pounds Zn per acre. For tree crops, use tissue tests to determine if Zn fertilization is needed, and it is known that no Zn is applied in the spray program.

Table 2. Interpretive guide to extractable Mn and Zn

	Soil pH Minerals Soils Only		
	5.5-6.0	6.0-6.5	6.5-7.0
	ppm		
Level below which there may be a crop response to applied Mn	3-5	5-7	7-9
Level below which there may be a crop response to applied Zn	0.5	0.5-1.0	1.0-3.0

The critical values shown in Table 2 are higher than those used in other states of the Southeastern U.S. and reflect a significant “margin of safety” in interpretation of the test results. These critical levels may be modified as results from field trials justify such changes.