# TEXAS A&M AGRILIFE EXTENSION

**Report generated for:**
Arbor True

21456 W Knox
Porter, TX 77365

**Bio-Solid Analysis Report**
Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
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Visit our website:
http://soiltesting.tamu.edu

Date Processed:  5/4/2018
Sample(s) from Harris County

**Section 1:**  Based on analysis of oven dried sample(s)

| Laboratory # | Customer Sample Identification | Total Nitrogen % | Total Phosphorus % | Total Potassium % | Total Calcium % | Total Magnesium % | Total Sodium % | Total Zinc ppm | Total Iron ppm |
|---|---|---|---|---|---|---|---|---|---|
| 45017417 | | 0.3494 | 0.0549 | 0.2634 | 1.1218 | 0.1349 | 0.0445 | 298.81 | 12942.40 |
| 45017418 | S 3 | 0.3315 | 0.0751 | 0.2175 | 1.0642 | 0.1334 | 0.0491 | 580.05 | 18923.90 |
| 45017419 | S 2 | 0.9982 | 0.1287 | 0.4994 | 1.7214 | 0.1822 | 0.0361 | 68.02 | 5138.49 |
| 45017420 | S 1 | 1.0305 | 0.1989 | 0.4853 | 2.0915 | 1.0110 | 0.3305 | 79.82 | 11758.00 |

| Laboratory # | Total Copper ppm | Total Manganese ppm | Total Sulfur ppm | Total Boron ppm | % Dry Matter | pH | Cond. Umhos/cm |
|---|---|---|---|---|---|---|---|
| 45017417 | 175.65 | 193.46 | 754.97 | 4.25 | 64.6 | 7.5 | 1069 |
| 45017418 | 329.28 | 179.79 | 892.87 | 11.99 | 62.6 | 7.4 | 779 |
| 45017419 | 28.37 | 172.64 | 1140.43 | 10.23 | 55.4 | 7.3 | 1270 |
| 45017420 | 32.09 | 497.26 | 1652.48 | 23.84 | 53.2 | 7.6 | 1033 |

**Section 2:**  Pounds of nutrient per ton on an as received basis

| Laboratory # | Customer Sample Identification | Nitrogen lbs/wet ton | P₂O₅ lbs/wet ton | K₂O lbs/wet ton | Calcium lbs/wet ton | Magnesium lbs/wet ton | Sodium lbs/wet ton | Zinc lbs/wet ton | Iron lbs/wet ton |
|---|---|---|---|---|---|---|---|---|---|
| 45017417 | | 4.52 | 1.63 | 4.09 | 14.50 | 1.74 | 0.57 | 0.386 | 16.730 |
| 45017418 | S 3 | 4.15 | 2.15 | 3.27 | 13.32 | 1.67 | 0.62 | 0.726 | 23.694 |
| 45017419 | S 2 | 11.05 | 3.26 | 6.64 | 19.06 | 2.02 | 0.40 | 0.075 | 5.690 |
| 45017420 | S 1 | 10.96 | 4.85 | 6.20 | 22.25 | 10.76 | 3.52 | 0.085 | 12.510 |

| Laboratory # | Copper lbs/wet ton | Manganese lbs/wet ton | Sulfur lbs/wet ton | Boron lbs/wet ton |
|---|---|---|---|---|
| 45017417 | 0.227 | 0.250 | 0.976 | 0.005 |
| 45017418 | 0.412 | 0.225 | 1.118 | 0.015 |
| 45017419 | 0.031 | 0.191 | 1.263 | 0.011 |
| 45017420 | 0.034 | 0.529 | 1.758 | 0.025 |

> Cheap compost is often made with toxic materials like treated pallets and railroad ties. Toxic levels of heavy metal will result.

# ArborTrue

**Client:**
AT Field Tests

Processed: 5-1-2018

**PCR Pathogen Panel**
ArborTrue Labs
21456 W. Knox Drive
Porter, TX 77365
ArborTrue.com

| | Ganoderma | Phytophthora | Inonotus | Armillaria |
|---|---|---|---|---|
| Sample 1 | NEG | NEG | NEG | NEG |
| Sample 2 | NEG | POS | POS | POS |
| Sample 3 | POS | POS | POS | POS |
| Sample 4 | POS | POS | POS | POS |

> Properly aged compost will have time to "cook" out the pathogens

> All but one compost yard tested positive for common disease causing pathogens

**Environment Celebration Institute Inc.**
13193 Oroville Quincy Highway
Berry Creek, CA 95916
530-589-9947
info@environmentcelebration.com

Arbor True Environmental Services
Brad Phillips
21456 W. Knox Dr.
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(832)803-8950
888arborist@gmail.com
April 13, 2018

*"Dedicated to promote peace, harmony, and dignity amongst all living things."*

**Sample Name:** ~~█████~~ *Sample 1*
**Sample Type:** Compost
**Plants Present/Desired:** Turf

| Beneficial Microorganisms | Minimum Requirements | Sample Results | = Standard Deviation |
|---|---|---|---|
| Bacteria (um/g) | 300 | 4,304 | High: The bacterial biomass is above the recommended range. Needs to be reduced. |
| | | 583 | |
| Actinobacteria (um/g) | 1-4 | 0.5 | Low: The actinobacteria is lower than what is normally found in healthy soils with similar plants. |
| | | 0.3 | |
| Fungi (um/g) | 300 | 77 | Low: The beneficial fungal biomass does not meet the minimum recommendations. Need to replenish and enhance. |
| | | 114 | |
| F:B Ratio | 0.8:1 – 1:1 | 0.02 | Low: The bacterial biomass needs to be reduced and the fungal biomass needs to be replenished. Once this is achieved, then the F:B ratio will be closer to the desired range for your types of plants. |
| | | | |
| Protozoa (Total) | >50000 | | Good: The beneficial protozoa numbers observed met the minimum requirements for your types of plants. |
| Flagellate (#/g) | (See Total) | 16,304 | |
| | | 36,457 | |
| Amoebae (#/g) | (See Total) | 65,216 | |
| | | 36,457 | |
| Nematodes | | | |
| Bacterial-feeding (#/g) | 200 | 0 | None detected: Bacteria-feeding nematodes help keep bacteria populations in balance. Need to replenish. |
| Fungal-feeding (#/g) | 20 | 0 | None detected: Fungal-feeding nematodes help to release nutrients from fungal hyphae to the plants. Need to replenish. |
| Predatory (#/g) | 2 | 0 | None detected: Need to replenish. |
| **Detrimental Microorganisms** | | | |
| Disease-Causing Fungi | | | |
| Oomycetes (um/g) | 0 | 0 | None detected. No disease-causing fungi were observed in the sample. Great! |
| | | 0 | |
| Anaerobic Protozoa | | | |
| Ciliate (#/g) | 0 | 0 | None detected: No ciliates were observed in the sample. Great! |
| | | 0 | |
| Nematode | | | |
| Root-feeding (#/g) | 0 | 0 | None detected. No root-feeding nematodes were detected. Great! |

Were any anaerobic indicating bacteria observed in the sample?    No
Were any pathogenic bacteria observed in the sample?    No

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**Sample Name:** ~~█~~ *Sample 2*
**Sample Type:** C   ost
**Plants Present/Desired:** ⊤

| Beneficial Microorganisms | Minimum Requirements | Sample Results | = Standard Deviation |
|---|---|---|---|
| Bacteria (um/g) | 300 | 1,663 | Okay: The results were within range but very high compared to beneficial fungi biomass. Reducing bacteria is recommended. |
| | | 213 | |
| Actinobacteria (um/g) | 1-4 | 0.6 | Low: The actinobacteria is lower than what is normally found in healthy soils with similar plants. |
| | | 0.4 | |
| Fungi (um/g) | 300 | 27 | Low: The beneficial fungal biomass does not meet the minimum recommendations. Need to replenish and enhance. |
| | | 40 | |
| F:B Ratio | 0.8:1 – 1:1 | 0.02 | Low: The bacterial biomass needs to be reduced and the fungal biomass needs to be replenished. Once this is achieved, then the F:B ratio will be closer to the desired range for your types of plants. |
| | | | |
| Protozoa (Total) | >50000 | | Low: Bacteria is the main source of food for protozoa. Protozoa help to keep the bacterial biomass in range and release nutrients into plant available form by consuming the bacteria. Need to replenish. |
| Flagellate (#/g) | (See Total) | 0 | |
| | | 0 | |
| Amoebae (#/g) | (See Total) | 8,152 | |
| | | 18,228 | |
| Nematodes | | | |
| Bacterial-feeding (#/g) | 200 | 0 | None detected: Bacteria-feeding nematodes help keep bacteria populations in balance. Need to replenish. |
| Fungal-feeding (#/g) | 20 | 0 | None detected: Fungal-feeding nematodes help to release nutrients from fungal hyphae to the plants. Need to replenish. |
| Predatory (#/g) | 2 | 0 | None detected: Need to replenish. |
| **Detrimental Microorganisms** | | | |
| Disease-Causing Fungi | | | |
| Oomycetes (um/g) | 0 | 0 | None detected. No disease-causing fungi were observed in the sample. Great! |
| | | 0 | |
| Anaerobic Protozoa | | | |
| Ciliate (#/g) | 0 | 0 | None detected: No ciliates were observed in the sample. Great! |
| | | 0 | |
| Nematode | | | |
| Root-feeding (#/g) | 0 | 0 | None detected. No root-feeding nematodes were detected. Great! |

Were any anaerobic indicating bacteria observed in the sample?    Yes
Were any pathogenic bacteria observed in the sample?    No

# Soil Foodweb Report

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**Sample Name:** Sample 3
**Sample Type:** Compost
**Plants Present/Desired:** Turf

| Beneficial Microorganisms | Minimum Requirements | Sample Results | |
|---|---|---|---|
| | | | = Standard Deviation |
| Bacteria (um/g) | 300 | 1,500 | Okay: The results were within range but very high compared to beneficial fungi biomass. Reducing bacteria is recommended. |
| | | 136 | |
| Actinobacteria (um/g) | 1-4 | 0.7 | Low: The actinobacteria is lower than what is normally found in healthy soils with similar plants. |
| | | 0.5 | |
| Fungi (um/g) | 300 | 37 | Low: The beneficial fungal biomass does not meet the minimum recommendations. Need to replenish and enhance. |
| | | 58 | |
| F:B Ratio | 0.8:1 – 1:1 | 0.02 | Low: The bacterial biomass needs to be reduced and the fungal biomass needs to be replenished. Once this is achieved, then the F:B ratio will be closer to the desired range for your types of plants. |
| | | | |
| *Protozoa* **(Total)** | >50000 | | None detected: Bacteria is the main source of food for protozoa. Protozoa help to keep the bacterial biomass in range and release nutrients into plant available form by consuming the bacteria. Need to replenish. |
| Flagellate (#/g) | (See Total) | 0 | |
| | | 0 | |
| Amoebae (#/g) | (See Total) | 0 | |
| | | 0 | |
| *Nematodes* | | | |
| Bacterial-feeding (#/g) | 200 | 0 | None detected: Bacteria-feeding nematodes help keep bacteria populations in balance. Need to replenish. |
| Fungal-feeding (#/g) | 20 | 0 | None detected: Fungal-feeding nematodes help to release nutrients from fungal hyphae to the plants. Need to replenish. |
| Predatory (#/g) | 2 | 0 | None detected: Need to replenish. |
| **Detrimental Microorganisms** | | | |
| *Disease-Causing Fungi* | | | |
| Oomycetes (um/g) | 0 | 0 | None detected. No disease-causing fungi were observed in the sample. Great! |
| | | 0 | |
| *Anaerobic Protozoa* | | | |
| Ciliate (#/g) | 0 | 0 | None detected: No ciliates were observed in the sample. Great! |
| | | 0 | |
| *Nematode* | | | |
| Root-feeding (#/g) | 0 | 0 | None detected. No root-feeding nematodes were detected. Great! |

Were any anaerobic indicating bacteria observed in the sample?　　　No
Were any pathogenic bacteria observed in the sample?　　　No