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Lab # 70176156 **Report of Analysis** Report Number: 22-269-4082

| | |
|---|---|
| **Account:** 14285 | HUGHES MULCH PRODUCTS<br>HUGHES MULCH PRODUCTS<br>3211 KEYSTONE DR<br>OMAHA NE 68134 |
| **Date Sampled:** | 2022-09-14 |
| **Date Received:** | 2022-09-14 |
| **Sample ID:** | 14 SEPT 2022 |

Robert Ferris
Account Manager
402-829-9871

LEAF YARDWASTE COMPOST

| | | Analysis (as rec'd) | Analysis (dry weight) | Total content, lbs per ton (as rec'd) |
|---|---|---|---|---|
| **NUTRIENTS** | | | | |
| Nitrogen | | | | |
| Total Nitrogen | % | 0.58 | 0.94 | 11.6 |
| Organic Nitrogen | % | 0.58 | 0.94 | 11.5 |
| Ammonium Nitrogen | % | 0.005 | 0.008 | 0.1 |
| Nitrate Nitrogen | % | < 0.01 | ---- | ---- |
| Major and Secondary Nutrients | | | | |
| Phosphorus | % | 0.09 | 0.15 | 1.8 |
| Phosphorus as P2O5 | % | 0.21 | 0.34 | 4.2 |
| Potassium | % | 0.38 | 0.62 | 7.6 |
| Potassium as K2O | % | 0.46 | 0.75 | 9.2 |
| Sulfur | % | 0.09 | 0.15 | 1.8 |
| Calcium | % | 1.49 | 2.43 | 29.8 |
| Magnesium | % | 0.32 | 0.52 | 6.4 |
| Sodium | % | 0.090 | 0.147 | 1.8 |
| Micronutrients | | | | |
| Iron | ppm | 9460 | 15402 | 18.9 |
| Manganese | ppm | 332 | 541 | 0.7 |
| Boron | ppm | < 100 | ---- | ---- |
| **OTHER PROPERTIES** | | | | |
| Moisture | % | 38.58 | | |
| Total Solids | % | 61.42 | | 1228.4 |
| Organic Matter | % | 31.00 | 50.47 | 620.0 |
| Ash | % | 30.10 | 49.01 | 602.0 |
| Total Carbon | % | 10.39 | 16.92 | |
| Chloride | % | 0.07 | 0.11 | |
| pH | | 7.6 | | |
| Conductivity 1:5 (Soluble Salts) | mS/cm | 1.19 | | |

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| Lab # 70176156 | **Biological & Physical Properties** | Report Number: 22-269-4082 |
|---|---|---|
| **Account:** 14285 | HUGHES MULCH PRODUCTS<br>HUGHES MULCH PRODUCTS<br>3211 KEYSTONE DR<br>OMAHA NE 68134 | Robert Ferris<br>Client Service Representative<br>402-829-9871 |
| **Date Sampled:** | 2022-09-14 | |
| **Date Received:** | 2022-09-14 | LEAF YARDWASTE COMPOST |
| **Sample ID:** | 14 SEPT 2022 | |

| | Analysis (as rec'd) | Analysis (dry weight) | Units | Detection Limit | Method |
|---|---|---|---|---|---|
| **Biological Properties** | | | | | |
| Germination | 100 | | % | 1 | TMECC 05.05A |
| Germination Vigor | 100 | | % | 1 | TMECC 05.05A |
| $CO_2$ OM Evolution | 0.21 | | $mgCO_2$-C/gOM/day | 0.01 | TMECC 05.08B |
| $CO_2$ Solids Evolution | 0.25 | | $mgCO_2$-C/gTS/day | 0.01 | TMECC 05.08B |
| Fecal Coliform | | 5624 | mpn/g | 0.2 | EPA 1681 |
| Salmonella | | < 1.2 | mpn/4g | 1.2 | TMECC 07.02 |
| Stability Rating | Stable | | N/A | N/A | TMECC 05.08B |
| **Physical Properties** | | | | | |
| Bulk Density (Loose) | 809 | | lbs/cu yard | 1 | WT/VOL |
| Bulk Density (Packed) | 994 | | lbs/cu yard | 1 | WT/VOL |
| Film Plastics | n.d. | | % | 0.1 | TMECC 03.08 |
| Glass Fragments | n.d. | | % | 0.1 | TMECC 03.08 |
| Hard Plastics | n.d. | | % | 0.1 | TMECC 03.08 |
| Metal Fragment | n.d. | | % | 0.1 | TMECC 03.08 |
| Sharps | absent | | --- | 0.1 | TMECC 03.08 |
| Max. Particle Length | | 2.5 | inches | N/A | TMECC Sieve |
| Sieve % Passing 3" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 2" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 1.5" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 1" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 3/4" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 5/8" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 3/8" | | 100 | % | 0.01 | TMECC Sieve |
| Sieve % Passing 1/4" | | 90 | % | 0.01 | TMECC Sieve |

Compost Results Interpretations

**Page 1**

| | |
|---|---|
| **Report #:** | 22-269-4082 |
| **DATE RECEIVED:** | 2022-09-14 |

Organic Matter %

31.00 As Received

50.47 Dry Weight

Greater than 20% indicates a desirable range for compost on a dry weight basis.

Compost is a significant source of Organic Matter, which is an important supplier of carbon. Organic Matter improves soil and plant efficiency by improving soil physical properties, providing a source of energy to beneficial organisms, and enhancing the reservoir of soil nutrients.

C/N Ratio

17.9:1

20-30 indicates an ideal range for the initial compost process.

10-20 indicates an ideal range for a finished compost.

All organic matter is made up of substantial amounts of carbon with lesser amounts of nitrogen. The balance of these two elements is called the Carbon/Nitrogen Ratio. For the best performance, the compost pile requires the correct proportion of carbon for energy and nitrogen for protein production. If the C:N ratio is too high (excess carbon) decomposition slows down. If the C:N ratio is too low (excess Nitrogen) the compost pile could be difficult to manage.

Moisture %

38.58

<35% = Indicates overly dry compost

>55% = Indicates overly wet compost

Moisture Percent is the measure of water present in the compost and expressed as a percentage of total weight. Moisture present affects handling and transport. Overly dry will be light and dusty while overly wet will be heavy and clumpy. A desirable moisture content of finished compost will range between 40 to 50%.

Compost Results Interpretations

**Page 2**

| | |
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Conductivity or Soluble Salts measures the conductance of electrical current in a liquid compost slurry. Excessive soluble salt content in a compost can prevent or delay seed germination and proper root growth. Conductivity analysis is done on a 1:5 basis.

| Conductivity 1:5 |
|---|
| 1.2 |

| **Conductivity Level** | **Interpretation** |
|---|---|
| Greater than 10 | Very High nutrient content. Use for Ag Applications |
| 5 - 10 | High nutrient content. Use for Ag Applications |
| 3 - 5 | Higher than desirable for salt sensitive plants, some loss of vigor |
| 0.6 - 3 | Desirable range for most plants |
| 0.3 - 0.6 | Ideal range for greenhouse growth media |
| 0.0 - 0.3 | Very Low: Indicates very low nutrient status: plants may show deficiencies. |

Compost Results Interpretations

**Page 3**

**Report #:** 22-269-4082

**DATE RECEIVED:** 2022-09-14

pH Value

7.6

0 to 14 scale with 6 to 8 as normal pH levels for compost

A pH in the 6 to 8 pH range indicates a more mature compost

pH measures the acidity or alkalinity of the compost, and is a measurement of the hydrogen ion activity of a soil or compost on a logarithmic scale. The pH scale ranges from 0 to 14 and 7 indicates a neutral pH. Growing media with a higher pH or pH greater than 7 can benefit from a compost that has a more acidic pH or pH below 7. This type of application will possibly lower the soil pH making the soil more conducive to plants that thrive in a more acidic soil condition.

Nutrient Index (Ag Index)

7.8

The Nutrient Index normally runs between 1 and 10.

The Nutrient Index is obtained by dividing the total nutrients (N,P,K) by the amount of salt (Sodium and Chloride). The higher the Nutrient Index the less chance of having a toxic buildup of Sodium (salt) in the soil.

***AG INDEX CHART***

| *salt injury possible* | *use on soils with excellent drainage characteristics, good water quality and low salts* | | | | *you may use on soils with poor drainage, poor water quality, or high salts* | | | | | *for all soils* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | > 10 |

Nutrients (N+P205+K20)

2.04 Average Nutrient Content Dry Weight <2 = Low, >5 = High

0.5-0-0.5 Rating As Received

The most commonly used compost data is the amount of Nitrogen, Phosphate, and Potash (abbreviated as N,P,K) present and the information is similar to that found in common fertilizers. If a compost result has the rating 1-2-2 it means that the compost has 1% Nitrogen, 2% Phosphate and 2% Potash. Most compost tests will have a average nutrient level (N+P+K) of < 5%.

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**3211 KEYSTONE DR**
**OMAHA NE 68134**

# REPORT OF ANALYSIS

For: (14285) HUGHES MULCH PRODUCTS
LEAF YARDWASTE COMPOST

| Analysis | Level Found As Received | Level Found Dry Weight | Units | Reporting Limit | Method | Analyst-Date | Verified-Date |
|---|---|---|---|---|---|---|---|
| Sample ID: **14 SEPT 2022** Lab Number: **70176156** Date Sampled: **2022-09-14 1545** | | | | | | | |
| Cadmium (total) | 1.36 | 2.22 | mg/kg | 0.50 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Chromium (total) | 8.66 | 14.1 | mg/kg | 1.00 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Mercury (total) | n.d. | n.d. | mg/kg | 0.05 | EPA 7471 | mrs3-2022/09/23 | kkh9-2022/09/25 |
| Lead (total) | 9.2 | 15.0 | mg/kg | 5.0 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Molybdenum (total) | n.d. | 1.3 | mg/kg | 1.0 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Nickel (total) | 8.1 | 13.2 | mg/kg | 1.0 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Selenium (total) | n.d. | n.d. | mg/kg | 10.0 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Zinc (total) | 48.9 | 79.6 | mg/kg | 2.0 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Copper (total) | 13.9 | 22.6 | mg/kg | 1 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |
| Arsenic (total) | 4.00 | 6.52 | mg/kg | 0.5 | EPA 6020 | ras7-2022/09/22 | kkh9-2022/09/25 |
| Cobalt (total) | 2.71 | 4.42 | mg/kg | 1.00 | EPA 6010 | erw9-2022/09/20 | kkh9-2022/09/25 |

REPORT NUMBER
**22-269-4082**

REPORT DATE
**Sep 26, 2022**

SEND TO
**14285**

RECEIVED DATE
**Sep 14, 2022**

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ISSUE DATE
**Sep 26, 2022**

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**OMAHA NE 68134**

## REPORT OF ANALYSIS

For: (14285) HUGHES MULCH PRODUCTS
LEAF YARDWASTE COMPOST

| Analysis | Level Found As Received | Level Found Dry Weight | Units | Reporting Limit | Method | Analyst-Date | Verified-Date |
|---|---|---|---|---|---|---|---|

n.d. = not detected , ppm = parts per million, ppm = mg/kg

For questions please contact:

Stefanie Rath
Account Manager
srath@midwestlabs.com (402)829-9881