23-338-1157

COMPLETED DATE
Dec 8, 2023
RECEIVED DATE
Dec 4, 2023

ACCOUNT **2226**

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/ Laboratories®

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Dec 08, 2023

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DORDT UNIVERSITY

AG DEPARTMENT

700 7TH STREET NE

SIOUX CENTER IA 51250

SOIL ANALYSIS REPORT

| | _ | _ | | | | | | | NEUTRAL AMMONIUM ACETATE (EXCHANGEABLE) | | | | | | | | INFO SHEET: 1658578 | | | | | | | | |
|--------|----------------|-------------------|-----|-----------------------|----|----------------|----|------------------------------|---|---------------------|-----|------|---------|------|----------|-------------|---------------------|--------------------|------------------------------------|------|------|-----|-----|--|--|
| LAB | SAMPLE | ORGANIC MATTER | | PHOSPHORUS | | | | | POTASS | POTASSIUM MAGNESIUM | | IUM | CALCIUM | | SODIUM | рН | | CATION | PERCENT BASE SATURATION (COMPUTED) | | | | | | |
| NUMBER | IDENTIFICATION | | | P ₁ | | P ₂ | | OLSEN | K | | Mg | | Ca | | Na | SOIL BUFFER | EXCHANGE CAPACITY | % | % | % | % | % | | | |
| *427* | | L.O. I. | | (WEAK E 1:7 ppm | 7 | 1:7 | | BICARBONATE P ppm RATE | | RATE | ppm | RATE | ppm | RATE | ppm RATE | pH 1:1 | INDEX | C.E.C. meq/100g | К | Mg | Ca | Н | Na | | |
| 87915 | With Rye | 4.5 ו | Н | 158 | VH | 159 | VH | | 477 | VH | 550 | VH | 3306 | Н | 16 | 7.4 | | 22.4 | 5.5 | 20.5 | 73.7 | 0.0 | 0.3 | | |
| 87916 | Post Burn | 3.9 ו | н . | 201 | VH | 202 | VH | | 447 | 7 VH | 529 | VH | 3050 | Н | 16 | 7.1 | | 20.9 | 5.5 | 21.1 | 73.1 | 0.0 | 0.3 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | NITE | rate-n (f | FIA) | | | | | SULFU | R | ZINC | I | MANGANESE | IRON | COPPER | BORON | EXCESS LIME | SOLUBL | E |
|------------|------------|-----------|---|--|------------------|--|--|---|---|--|---|--|---------------------------------|---|--|---|--|--|
| SURFACE | SUBSOIL 1 | | | SUBSOIL 2 | | | | S | | | | | Fe | Cu | B SORE DITE | RATE | | |
| lbs/A (in) | ppm | lbs/A | depth (in) | ppm | lbs/A | depth (in) | lotai Ibs/A | ppm RATE | | | | ppm RATE | | | | | mmhos/ | ATE |
| 36 0-6 | | | | | | | 36 | 10 | L | 9.4 \ | ٧H | 4 VL | 44 vh | 2.8 VH | 0.9 | мL | 0.4 | L |
| | | | | | | | | | | | | | | | | | | |
| 31 0-6 | | | | | | | 31 | 7 | L | 7.1 \ | VΗ | 3 VL | 44 vH | 2.2 VH | 0.6 | LLL | 0.5 | L |
| | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | |
| | depth (in) | URFACE | URFACE SUBSOIL 1 depth ppm lbs/A 36 | depth depth depth depth depth depth depth de | URFACE SUBSOIL 1 | URFACE SUBSOIL 1 SUBSOIL 2 Ibs/A depth ppm lbs/A depth (in) ppm lbs/A 36 O-6 | URFACE SUBSOIL 1 SUBSOIL 2 Ibs/A depth (in) ppm lbs/A depth (in) ppm lbs/A depth (in) 36 O-6 0-6 | URFACE SUBSOIL 1 SUBSOIL 2 Total lbs/A depth (in) ppm lbs/A depth (in) 26 36 0-6 36 | URFACE SUBSOIL 1 SUBSOIL 2 Total lbs/A depth (in) ppm lbs/A (in) ppm depth (in) ppm 36 10 | URFACE SUBSOIL 1 SUBSOIL 2 Total lbs/A depth (in) ppm lbs/A (in) ppm lbs/A (in) SUBSOIL 2 Total lbs/A ppm RATE 36 0-6 36 10 L | URFACE SUBSOIL 1 SUBSOIL 2 Total Ibs/A depth ppm Ibs/A depth ppm RATE ppm F | URFACE SUBSOIL 1 SUBSOIL 2 depth depth (in) ppm lbs/A (in) ppm lbs/A depth (in) ppm RATE ppm RATE 36 | URFACE SUBSOIL 1 SUBSOIL 2 S | URFACE SUBSOIL 1 SUBSOIL 2 South Substitution Substitution | URFACE SUBSOIL 1 SUBSOIL 2 Total lbs/A depth (in) ppm lbs/A (in) ppm lbs/A (in) ppm lbs/A (in) SUBSOIL 2 Total lbs/A (in) ppm RATE ppm RAT | URFACE SUBSOIL 1 SUBSOIL 2 South South | URFACE SUBSOIL 1 SUBSOIL 2 | URFACE SUBSOIL 1 SUBSOIL 2 |

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IDENTIFICATION

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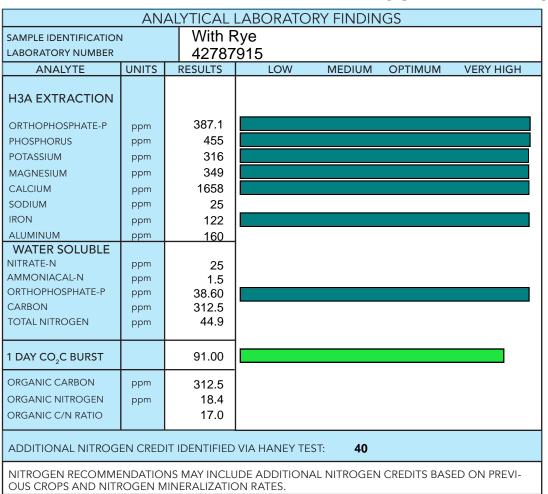
ANA TIMMER

RYE COVER CROP STUDY

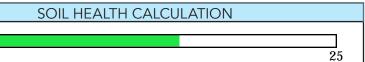
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SOIL HEALTH ASSESSMENT

14.1



The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.



The **H3A Soil Extractant** was developed by Haney*. This extract is designed to mimic organic acids produced by living plant root systems. These organic acids increase nutrient availability in the root zone.

The **Water Soluble Extract** provides a snapshot of nutrients that are immediately available to the plants.

The **CO₂ Burst** test is very good indicator of soil health. This test measures the amount of CO₂ naturally released from the soil due to the activity of the soil microbes through microbial respiration. This test is very dependent on the amount of carbon that is available to the soil microbes and the form that the carbon is in. As the available carbon increases in your soil the Microbial respiration will increase.

Organic Carbon is the available total water extractable organic carbon from your soil. This pool of carbon is roughly 80 times smaller than the Soil Organic Matter. The organic carbon pool reflects the energy/food source that is driving the soil microbes.

The **Organic Nitrogen** pool is replenished by fresh plant residues, manure, composts, and dying soil microbes.

The **Organic C/N ratio** is a critical component of the nutrient cycle. A soil C/N ratio above 20 generally indicates that Nitrogen will be tied up and not available to plants. The ideal range for the Organic C/N ratio will be from 8:1 to 15:1.

The **Soil Health Calculation** uses the CO₂ Burst, Organic Carbon, Organic Nitrogen, and the C/N ratio to generate the soil health number. This calculation looks at the balance of soil carbon and nitrogen and their relationship to microbial activity. This number represents the overall health of your system. Soil values will range from 0 to 25. A soil with a value below 7 would be considered low. You want to see this number increase as you make changes and adjustments. Keeping track of this number will allow you to gauge the effects of your management practices over time.

*Modifications to the New Soil Extractant H3A-1: A Multinutrient Extractant R.L. Haney (a); E.B. Haney (b); L.R. Hossner (c); J.G. Arnold (a)

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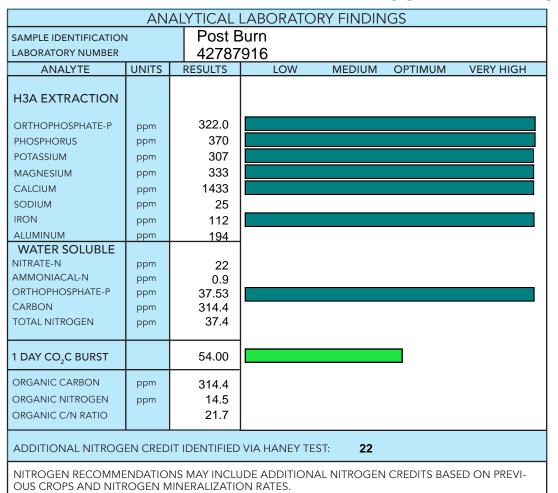
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ANA TIMMER

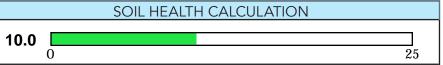
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