





13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770  
www.midwestlabs.com

**DORDT UNIVERSITY  
AG DEPARTMENT  
700 7TH STREET NE  
SIOUX CENTER IA 51250**

**IDENTIFICATION**  
DORDT UNIVERSITY  
ANA TIMMER  
RYE COVER CROP STUDY

**SOIL HEALTH ASSESSMENT**

**ANALYTICAL LABORATORY FINDINGS**

SAMPLE IDENTIFICATION		With Rye				
LABORATORY NUMBER		42787915				
ANALYTE	UNITS	RESULTS	LOW	MEDIUM	OPTIMUM	VERY HIGH
<b>H3A EXTRACTION</b>						
ORTHOPHOSPHATE-P	ppm	387.1				
PHOSPHORUS	ppm	455				
POTASSIUM	ppm	316				
MAGNESIUM	ppm	349				
CALCIUM	ppm	1658				
SODIUM	ppm	25				
IRON	ppm	122				
ALUMINUM	ppm	160				
<b>WATER SOLUBLE</b>						
NITRATE-N	ppm	25				
AMMONIACAL-N	ppm	1.5				
ORTHOPHOSPHATE-P	ppm	38.60				
CARBON	ppm	312.5				
TOTAL NITROGEN	ppm	44.9				
<b>1 DAY CO<sub>2</sub>C BURST</b>						
		91.00				
ORGANIC CARBON	ppm	312.5				
ORGANIC NITROGEN	ppm	18.4				
ORGANIC C/N RATIO		17.0				

ADDITIONAL NITROGEN CREDIT IDENTIFIED VIA HANEY TEST: **40**

NITROGEN RECOMMENDATIONS MAY INCLUDE ADDITIONAL NITROGEN CREDITS BASED ON PREVIOUS CROPS AND NITROGEN MINERALIZATION RATES.

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

**SOIL HEALTH CALCULATION**



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 **CO<sub>2</sub> Burst** test is very good indicator of soil health. This test measures the amount of CO<sub>2</sub> 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 CO<sub>2</sub> 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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**SOIL HEALTH ASSESSMENT**

**ANALYTICAL LABORATORY FINDINGS**

SAMPLE IDENTIFICATION		Post Burn				
LABORATORY NUMBER		42787916				
ANALYTE	UNITS	RESULTS	LOW	MEDIUM	OPTIMUM	VERY HIGH
<b>H3A EXTRACTION</b>						
ORTHOPHOSPHATE-P	ppm	322.0				
PHOSPHORUS	ppm	370				
POTASSIUM	ppm	307				
MAGNESIUM	ppm	333				
CALCIUM	ppm	1433				
SODIUM	ppm	25				
IRON	ppm	112				
ALUMINUM	ppm	194				
<b>WATER SOLUBLE</b>						
NITRATE-N	ppm	22				
AMMONIACAL-N	ppm	0.9				
ORTHOPHOSPHATE-P	ppm	37.53				
CARBON	ppm	314.4				
TOTAL NITROGEN	ppm	37.4				
<b>1 DAY CO<sub>2</sub>C BURST</b>						
		54.00				
ORGANIC CARBON	ppm	314.4				
ORGANIC NITROGEN	ppm	14.5				
ORGANIC C/N RATIO		21.7				

ADDITIONAL NITROGEN CREDIT IDENTIFIED VIA HANEY TEST: **22**

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