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Oct 20, 2022

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Oct 18, 2022

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2226



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

IDENTIFICATION
ANA TIMMER

RYE COVER CROP - PRE

SOIL ANALYSIS REPORT

LAB NUMBER	SAMPLE IDENTIFICATION	ORGANIC MATTER L.O. I. percent RATE	NEUTRAL AMMONIUM ACETATE (EXCHANGEABLE)						POTASSIUM K ppm RATE	MAGNESIUM Mg ppm RATE	CALCIUM Ca ppm RATE	SODIUM Na ppm RATE	pH		CATION EXCHANGE CAPACITY C.E.C. meq/100g	INFO SHEET: 1504350 PERCENT BASE SATURATION (COMPUTED)				
			PHOSPHORUS			% K		% Mg					% Ca			% H		% Na		
			P ₁ (WEAK BRAY) 1:7 ppm RATE	P ₂ (STRONG BRAY) 1:7 ppm RATE	OLSEN BICARBONATE P ppm RATE															
402												SOIL pH 1:1	BUFFER INDEX		% K	% Mg	% Ca	% H	% Na	
60800	PRE-RYE	4.0 H	184 VH	185 VH			399 VH	560 VH	3390 H	28		7.0		22.8	4.5	20.5	74.5	0.0	0.5	

LAB NUMBER	NITRATE-N (FIA)										SULFUR S ICAP ppm RATE	ZINC Zn DTPA ppm RATE	MANGANESE Mn DTPA ppm RATE	IRON Fe DTPA ppm RATE	COPPER Cu DTPA ppm RATE	BORON B SORB. DTPA ppm RATE	EXCESS LIME RATE	SOLUBLE SALTS 1:1 mmhos/cm RATE
	SURFACE			SUBSOIL 1			SUBSOIL 2			Total lbs/A								
	ppm	lbs/A	depth (in)	ppm	lbs/A	depth (in)	ppm	lbs/A	depth (in)									
402																		
60800	40	72	0-6							72	12 L	6.8 VH	3 VL	42 VH	2.4 VH	0.7 L	L	0.6 L

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

SOIL HEALTH ASSESSMENT

ANALYTICAL LABORATORY FINDINGS

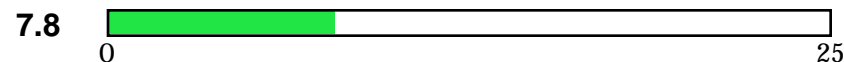
SAMPLE IDENTIFICATION		PRE-RYE				
LABORATORY NUMBER		40260800				
ANALYTE	UNITS	RESULTS	LOW	MEDIUM	OPTIMUM	VERY HIGH
H3A EXTRACTION						
ORTHOPHOSPHATE-P	ppm	329.7	[Bar chart showing value 329.7]			
PHOSPHORUS	ppm	346	[Bar chart showing value 346]			
POTASSIUM	ppm	196	[Bar chart showing value 196]			
MAGNESIUM	ppm	280	[Bar chart showing value 280]			
CALCIUM	ppm	1317	[Bar chart showing value 1317]			
SODIUM	ppm	29	[Bar chart showing value 29]			
IRON	ppm	96	[Bar chart showing value 96]			
ALUMINUM	ppm	135	[Bar chart showing value 135]			
WATER SOLUBLE						
NITRATE-N	ppm	57	[Bar chart showing value 57]			
AMMONIACAL-N	ppm	2.6	[Bar chart showing value 2.6]			
ORTHOPHOSPHATE-P	ppm	35.96	[Bar chart showing value 35.96]			
CARBON	ppm	194.4	[Bar chart showing value 194.4]			
TOTAL NITROGEN	ppm	61.5	[Bar chart showing value 61.5]			
1 DAY CO₂C BURST						
		57.00	[Bar chart showing value 57.00]			
ORGANIC CARBON	ppm	194.4	[Bar chart showing value 194.4]			
ORGANIC NITROGEN	ppm	1.9	[Bar chart showing value 1.9]			
ORGANIC C/N RATIO		102.3	[Bar chart showing value 102.3]			

ADDITIONAL NITROGEN CREDIT IDENTIFIED VIA HANEY TEST: **9**

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

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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 **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)