

23-160-0117

COMPLETED DATE
Jun 15, 2023
 RECEIVED DATE
Jun 9, 2023

ACCOUNT
69838



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

IDENTIFICATION

FARMERS FOR LAKE COUNTRY

SOIL HEALTH

2023

ERIK JOOST
Erik Joost
900 S Worthington st.
oconomowoc WI 53066

SOIL HEALTH ASSESSMENT

TODAY'S DATE
Jun 15, 2023

ANALYTICAL LABORATORY FINDINGS

SAMPLE IDENTIFICATION LABORATORY NUMBER	UNITS	RESULTS	LOW	MEDIUM	OPTIMUM	VERY HIGH
H3A EXTRACTION						
ORTHOPHOSPHATE-P	ppm	7.4				
PHOSPHORUS	ppm	10				
POTASSIUM	ppm	44				
MAGNESIUM	ppm	191				
CALCIUM	ppm	534				
SODIUM	ppm	11				
IRON	ppm	96				
ALUMINUM	ppm	170				
WATER SOLUBLE						
NITRATE-N	ppm	2				
AMMONIACAL-N	ppm	1.3				
ORTHOPHOSPHATE-P	ppm	0.46				
CARBON	ppm	274.7				
TOTAL NITROGEN	ppm	20.0				
1 DAY CO ₂ C BURST		262.00				
ORGANIC CARBON	ppm	274.7				
ORGANIC NITROGEN	ppm	16.7				
ORGANIC C/N RATIO		16.5				

ADDITIONAL NITROGEN CREDIT IDENTIFIED VIA HANEY TEST: **N/A. Sample depth not 0-6"**

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 **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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SAMPLE IDENTIFICATION	UNITS	RESULTS	LOW	MEDIUM	OPTIMUM	VERY HIGH
LABORATORY NUMBER		GHprairie2 41639746		2023	<i>Upper prairie</i>	<i>Dry prairie</i>
ANALYTE						
H3A EXTRACTION						
ORTHOPHOSPHATE-P	ppm	5.7				
PHOSPHORUS	ppm	9				
POTASSIUM	ppm	45				
MAGNESIUM	ppm	253				
CALCIUM	ppm	559				
SODIUM	ppm	12				
IRON	ppm	83				
ALUMINUM	ppm	170				
WATER SOLUBLE						
NITRATE-N	ppm	4				
AMMONIACAL-N	ppm	0.5				
ORTHOPHOSPHATE-P	ppm	0.16				
CARBON	ppm	220.3				
TOTAL NITROGEN	ppm	16.7				
1 DAY CO₂C BURST						
		220.00				
ORGANIC CARBON	ppm	220.3				
ORGANIC NITROGEN	ppm	12.2				
ORGANIC C/N RATIO		18.1				

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ANALYTICAL LABORATORY FINDINGS

SAMPLE IDENTIFICATION	GH-Pasture	2023	Non-Native	Cool	Season	
LABORATORY NUMBER	41639744	8 yrs	as	Pasture	Pasture	
ANALYTE	UNITS	RESULTS	LOW	MEDIUM	OPTIMUM	VERY HIGH
H3A EXTRACTION						
ORTHOPHOSPHATE-P	ppm	8.1				
PHOSPHORUS	ppm	11				
POTASSIUM	ppm	55				
MAGNESIUM	ppm	338				
CALCIUM	ppm	561				
SODIUM	ppm	11				
IRON	ppm	72				
ALUMINUM	ppm	159				
WATER SOLUBLE						
NITRATE-N	ppm	9				
AMMONIACAL-N	ppm	0.4				
ORTHOPHOSPHATE-P	ppm	0.12				
CARBON	ppm	237.0				
TOTAL NITROGEN	ppm	23.9				
1 DAY CO₂ C BURST						
		181.00				
ORGANIC CARBON	ppm	237.0				
ORGANIC NITROGEN	ppm	14.5				
ORGANIC C/N RATIO		16.3				

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