

# Certificate of Analysis



Certificate Number: 20-013962

**Report Date:** November 13, 2020

**Client:**

**HOMELAND ENERGY SOLUTIONS**  
 2779 IA HIGHWAY 24  
 LAWLER IA 52154  
 UNITED STATES

**Sample Information:**

**SGS Sample Identification:** MW20-08484.001  
**Client Sample Identification:** 110220 SYRUP  
**Received:** November 04, 2020  
**Sample/Product Type:** Syrup, DDG

The sample condition upon arrival was acceptable for testing.

Analysis	Result	Units	L.O.Q.	Method
Calcium	0.01	%	0.0028	ANA008CHEM
Copper	3.05	PPM	2.7889	ANA008CHEM
Iron	31.51	PPM	6.8889	ANA008CHEM
Potassium	1.03	%	0.0694	ANA008CHEM
Magnesium	0.27	%	0.0209	ANA008CHEM
Manganese	7.03	PPM	0.9778	ANA008CHEM
Sodium	N.D.	%	0.014	ANA008CHEM
Phosphorus	0.77	%	0.0554	ANA008CHEM
Sulfur	0.20	%	0.021	ANA008CHEM
Zinc	13.11	PPM	5.5556	ANA008CHEM

Analysis	As Received	On Dry Matter	Units	Method
Drymatter	31.32	--	%	NFTA 2.2.2.5
Moisture	68.68	--	%	NFTA 2.2.2.5
Crude Fiber	0.23	0.72	%	ANA032CHEM
Crude ash content	1.731	5.526	%	AOAC 942.05 (mod)
Crude Fat	N.D.	0.64	%	AOAC 2003.06 (Petroleum Ether)
Crude Protein	9.40	30.01	%	ANA030CHEM
ADF	0.15	0.47	%	ANKOM Technology Method 5
NDF	N.D.	N.D.	%	ANKOM Technology Method 6
Acid detergent fiber	0.15	0.47	%	Calculation
Digestable Energy	0.59	1.90	Mcal/lb	Calculation
Metabolizable Energy	0.45	--	Mcal/lb	Calculation
Net Energy Gain	0.24	0.77	Mcal/lb	Calculation
Net Energy Lactation	0.31	0.98	Mcal/lb	Calculation
Net Energy Maintenance	0.34	1.10	Mcal/lb	Calculation
Total digestable nutrients	29.18	93.17	%	Calculation

**Abbreviations:**

**L.O.Q.:** Limit of Quantification    **L.O.D.:** Limit of Detection    **N/A:** Not Applicable    **N.D.:** Not Detected  
**N.A.:** Not Applicable    **N.D.:** Not Detected

WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and/or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

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**SGS North America Inc.**

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Brookings, SD 57006  
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A blue ink signature of Dustin Edmison, written in a cursive style.

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Dustin Edmison  
Laboratory Manager

**Start/End Analysis:** 11/04/2020 - 11/12/2020

**Method References:**

ANA008CHEM: AOAC 2011.14; EN17053:2018; USP <2232>; EPA 200.7; AOAC 985.01  
ANA032CHEM: AOAC 962.09,  
AOCS Ba 6a-05  
ANA030CHEM: AACC 46-30.01, AOAC 992.15, AOAC 990.03

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