

Certificate of Analysis



Certificate Number: 23-000721
Report Date: January 19, 2023

Client:
HOMELAND ENERGY SOLUTIONS
2779 IA HIGHWAY 24
LAWLER IA 52154
UNITED STATES

Sample Information:
SGS Sample Identification: MW23-00314.001
Client Sample Identification: 010923 DDGS
Received: January 11, 2023
Sample/Product Type: Distillers dried grains with solubles
The sample condition upon arrival was acceptable for testing.

| Analysis | Result | Units | L.O.Q. | Method |
|----------------|--------|-------|--------|--------------------------|
| Calcium | 0.02 | % | 0.0028 | ANA008CHEM |
| Copper | 5.61 | PPM | 2.7889 | ANA008CHEM |
| Iron | 66.43 | PPM | 6.8889 | ANA008CHEM |
| Potassium | 1.32 | % | 0.0694 | ANA008CHEM |
| Magnesium | 0.40 | % | 0.0209 | ANA008CHEM |
| Manganese | 14.28 | PPM | 0.9778 | ANA008CHEM |
| Sodium | N.D. | % | 0.014 | ANA008CHEM |
| Phosphorus | 1.09 | % | 0.0554 | ANA008CHEM |
| Sulfur | 0.41 | % | 0.021 | ANA008CHEM |
| Zinc | 57.21 | PPM | 5.5556 | ANA008CHEM |
| Hunter L Color | 43.95 | | N/A | Hunter Labs Colorflex EZ |

| Analysis | As Received | On Dry Matter | Units | Method |
|----------------------------|-------------|---------------|---------|--------------------------------|
| Drymatter | 88.40 | -- | % | NFTA 2.2.2.5 |
| Moisture | 11.60 | -- | % | NFTA 2.2.2.5 |
| Crude Fiber | 8.56 | 9.68 | % | ANA032CHEM |
| Crude ash content | 4.760 | 5.384 | % | AOAC 942.05 (mod) |
| NDF | 31.37 | 35.48 | % | ANKOM Technology Method 6 |
| Crude Fat | 6.30 | 7.13 | % | AOAC 2003.06 (Petroleum Ether) |
| Crude Protein | 29.18 | 33.00 | % | ANA030CHEM |
| Acid detergent fiber | 10.70 | 12.10 | % | Calculation |
| Digestable Energy | 1.59 | 1.80 | Mcal/lb | Calculation |
| Metabolizable Energy | 1.30 | -- | Mcal/lb | Calculation |
| Net Energy Gain | 0.58 | 0.65 | Mcal/lb | Calculation |
| Net Energy Lactation | 0.78 | 0.89 | Mcal/lb | Calculation |
| Net Energy Maintenance | 0.87 | 0.98 | Mcal/lb | Calculation |
| Total digestable nutrients | 74.55 | 84.33 | % | Calculation |
| Starch Content | 1.203 | 1.361 | g/100g | AOAC996.11 |

Abbreviations:

L.O.Q.: Limit of Quantification **L.O.D.:** Limit of Detection **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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A blue ink signature of Dustin Edmison, written in a cursive style.

Dustin Edmison
Laboratory Manager

Start/End Analysis: 01/11/2023 - 01/18/2023

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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