

**LINCOLNLAND AGRI-ENERGY LLC  
MICHELLE MCGUIRE  
10406 N 1725TH ST  
PALESTINE IL 62451-**

**REPORT OF ANALYSIS**

For: (16742) LINCOLNLAND AGRI-ENERGY LLC  
DDG  
013143

| Analysis                      | Level Found                 |            | Units                           | Reporting |                    | Analyst-<br>Date | Verified-<br>Date |
|-------------------------------|-----------------------------|------------|---------------------------------|-----------|--------------------|------------------|-------------------|
|                               | As Received                 | Dry Weight |                                 | Limit     | Method             |                  |                   |
| Sample ID: <b>D1-20161027</b> | Lab Number: <b>12728661</b> |            | Date Sampled: <b>2016-10-27</b> |           |                    |                  |                   |
| Moisture (distillers grains)  | 11.8                        | //////     | %                               | 0.01      | NFTA 2.2.2.5       | ddd1-2016/11/01  | cde2-2016/11/02   |
| Dry matter                    | 88.20                       | //////     | %                               | 0.010     | Calculation        | Auto-2016/11/03  | Auto-2016/11/03   |
| Protein (crude)               | 27.1                        | 30.7       | %                               | 0.20      | AOAC 990.03        | kfl0-2016/11/01  | cde2-2016/11/02   |
| Fat (crude)                   | 6.46                        | 7.32       | %                               | 0.10      | AOAC 945.16        | kfl0-2016/11/01  | cde2-2016/11/02   |
| Fiber (acid detergent)        | 13.5                        | 15.3       | %                               | 0.5       | ANKOM Tech. Method | vrn7-2016/11/01  | cde2-2016/11/02   |
| Ash                           | 4.60                        | 5.22       | %                               | 0.10      | AOAC 942.05        | kap7-2016/11/02  | cde2-2016/11/02   |
| Starch (total)                | 3.36                        | 3.81       | %                               | 0.1       | AACC 76-11 (mod)   | jsp2-2016/11/01  | acm2-2016/11/01   |
| Total digestible nutrients    | 72.1                        | 81.8       | %                               | 0.1       | Calculation        | Auto-2016/11/02  | Auto-2016/11/03   |
| Net energy (lactation)        | 0.76                        | 0.86       | Mcal/lbs                        | 0.01      | Calculation        | Auto-2016/11/02  | Auto-2016/11/03   |
| Net energy (maint.)           | 0.78                        | 0.89       | Mcal/lbs                        | 0.01      | Calculation        | Auto-2016/11/02  | Auto-2016/11/03   |
| Net energy (gain)             | 0.52                        | 0.59       | Mcal/lbs                        | 0.01      | Calculation        | Auto-2016/11/02  | Auto-2016/11/03   |
| Digestible energy             | 1.45                        | 1.64       | Mcal/lbs                        | 0.01      | Calculation        | Auto-2016/11/02  | Auto-2016/11/03   |
| Metabolizable energy          | 1.30                        | 1.47       | Mcal/lbs                        | 0.01      | Calculation        | Auto-2016/11/02  | Auto-2016/11/03   |
| Sulfur (total)                | 0.74                        | 0.84       | %                               | 0.01      | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Phosphorus (total)            | 1.06                        | 1.20       | %                               | 0.01      | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Potassium (total)             | 1.29                        | 1.46       | %                               | 0.01      | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Magnesium (total)             | 0.32                        | 0.36       | %                               | 0.01      | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Calcium (total)               | 0.02                        | 0.02       | %                               | 0.01      | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Sodium (total)                | 0.24                        | 0.27       | %                               | 0.01      | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |

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| Analysis                      | Level Found                         |            | Units | Reporting |                    | Analyst-<br>Date | Verified-<br>Date |
|-------------------------------|-------------------------------------|------------|-------|-----------|--------------------|------------------|-------------------|
|                               | As Received                         | Dry Weight |       | Limit     | Method             |                  |                   |
| <b>Sample ID: D1-20161027</b> | Lab Number: <b>12728661</b> (con't) |            |       |           |                    |                  |                   |
| Iron (total)                  | 77.2                                | 87.5       | ppm   | 5.0       | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Manganese (total)             | 18.4                                | 20.9       | ppm   | 1.0       | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Copper (total)                | 7.3                                 | 8.3        | ppm   | 1.0       | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Zinc (total)                  | 70.8                                | 80.3       | ppm   | 1.0       | AOAC 985.01 (mod)  | trh1-2016/11/01  | cde2-2016/11/02   |
| Aflatoxin B1                  | n.d.                                |            | ppb   | 1         | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| Aflatoxin B2                  | n.d.                                |            | ppb   | 1         | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| Aflatoxin G1                  | n.d.                                |            | ppb   | 1         | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| Aflatoxin G2                  | n.d.                                |            | ppb   | 1         | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| Aflatoxin summation           | n.d.                                |            | ppb   | 1.00      | Calculation        | Auto-2016/11/03  | Auto-2016/11/03   |
| DON (Vomitoxin)               | 2.2                                 |            | ppm   | 0.1       | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| Fumonisin B1                  | 3.00                                |            | ppm   | 0.10      | AOAC 2008.02 (mod) | kia9-2016/11/03  | tjp8-2016/11/03   |
| Fumonisin B2                  | 0.81                                |            | ppm   | 0.10      | AOAC 2008.02 (mod) | kia9-2016/11/03  | tjp8-2016/11/03   |
| Fumonisin B3                  | 0.13                                |            | ppm   | 0.10      | AOAC 2008.02 (mod) | kia9-2016/11/03  | tjp8-2016/11/03   |
| Fumonisin summation           | 3.94                                |            | ppm   | 0.10      | Calculation        | Auto-2016/11/03  | Auto-2016/11/03   |
| Ochratoxin                    | n.d.                                |            | ppb   | 1         | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| T-2 toxin                     | n.d.                                |            | ppm   | 0.1       | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |
| Zearalenone                   | 80.6                                |            | ppb   | 50.0      | AOAC 2008.02 (mod) | kia9-2016/11/02  | tjp8-2016/11/03   |

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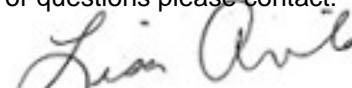
| Analysis | Level Found |            | Units | Reporting |        | Analyst-<br>Date | Verified-<br>Date |
|----------|-------------|------------|-------|-----------|--------|------------------|-------------------|
|          | As Received | Dry Weight |       | Limit     | Method |                  |                   |

n.d. = not detected , ppm = parts per million, ppm = mg/kg , ppb = parts per billion Mineral analysis performed by ICAP using a wet digest procedure.

Moisture determined using 3hr@105 Deg. C Method.

Total starch value includes all hydrolyzable carbohydrates.

For questions please contact:



Lisa Avila  
Staff

lisa.avila@midwestlabs.com (402)829-9847

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**Detailed Method Description(s)****DDG Moisture**

Analysis follows MWL FD 075 which is based on NFTA 2.2.2.5. Samples are weighed and placed in a 105 degree convection oven for 3 hours to calculate % moisture.

**Calculation**

Analytical results are entered into applicable formulas to provide a calculated result which is reported.

**Protein (Crude)**

Analysis follows MWL FD 070 which is based on AOAC 990.03. The sample is placed in a combustion instrument and the amount of nitrogen is obtained. The nitrogen value is multiplied by a factor of 6.25 and that value reported as crude protein.

**Crude Fat**

Analysis follows MWL FD 026 which is based on AOAC 945.16. The sample is extracted with drip immersion of the sample in petroleum (pet) ether. The pet ether is poured into a pre-weighed container and then evaporated. The container is re-weighed and the increase in weight is reported as crude fat

**Acid Detergent Fiber**

Analysis follows MWL FD 021 which is based on Ankom Technology method. The sample is sealed in a small bag and the bag immersed in a solution that dissolves certain materials. The bag is washed and dried and re-weighed. The material remaining in the bag is reported as acid detergent fiber

**Ash**

Analysis follows MWL FD 019 which is based on AOAC 942.05. The sample is weighed and placed in a muffle furnace at 600°C. After a period of time, the sample is removed and the remaining material weighed and reported as ash. Moisture and organic material is driven off.

**AACC 76-11 (mod)**

Analysis follows WC 047 which is based on modified AACC-76-11 and YSI Application Note 319. A sample is combined with water and placed in an autoclave. After the autoclave step, buffer and amyloglucosidase enzyme are added and the sample placed in a water bath where the starch is hydrolyzed to glucose. The glucose is then determined using a YSI glucometer.

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**ICP analysis of Feeds**

Analysis follows MWL ME 029 which is based on AOAC 985.01. Samples have been prepared using MWL ME 069 which is a wet ash procedure that requires mineral acids and heat. Sample analysis involves moving the sample extract into the ICP where it is nebulized and introduced into the high temperature plasma which energizes the electrons of the dissolved minerals/metals. As the energized electrons of the minerals/metals return to ground state, energy is released as light. The emitted wavelength(s) and light intensities are used to identify and quantitate the minerals/metals in the sample

**Mycotoxin extraction and analysis**

Sample analysis follows MWL LCMS 020 which is based on AOAC 2008.02 (modified). Samples are ground to a homogenous consistency and placed in an extraction solution. The extract is allowed to equilibrate and then an aliquot passed through an immunoaffinity column which contains antibodies that are specific for the mycotoxins. The mycotoxins are released from the affinity column and then analyzed by either LC/MS and/or LC/MS/MS which allows identification of the mycotoxins using mass spectrometry and retention time.

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