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ISSUE DATE
Dec 08, 2014

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

REPORT OF ANALYSIS

For: (16742) LINCOLNLAND AGRI-ENERGY LLC
DDG
DISTILLER DRIED GRAIN

Analysis	Level Found As Received	Level Found Dry Weight	Units	Reporting Limit	Method	Analyst-Date	Verified-Date
Sample ID: **D1-20141118** Lab Number: **12364768**							
Moisture (distillers grains)	12.5	///////	%	0.01	NFTA 2.2.2.5 *	zlk8-2014/11/20	jpt1-2014/11/21
Dry matter	87.50	///////	%	0.010	Calculation *	Auto-2014/12/08	Auto-2014/12/08
Protein (crude)	26.9	30.7	%	0.20	AOAC 990.03 *	kfl0-2014/11/20	jpt1-2014/11/21
Fat (crude)	6.99	7.99	%	0.10	AOAC 945.16 *	kfl0-2014/11/20	jpt1-2014/11/21
Fiber (acid detergent)	11.6	13.2	%	0.5	ANKOM Tech. Method *	vrm7-2014/11/20	jpt1-2014/11/21
Ash	5.36	6.12	%	0.10	AOAC 942.05 *	vrm7-2014/11/21	jpt1-2014/11/21
Starch (total)	2.79	3.19	%	0.10	AACC 76-11 (mod) *	alm0-2014/11/21	mgn8-2014/11/24
Total digestible nutrients	72.0	82.3	%	0.1	Calculation *	Auto-2014/11/21	Auto-2014/12/08
Net energy (lactation)	0.75	0.86	Mcal/lbs	0.01	Calculation *	Auto-2014/11/21	Auto-2014/12/08
Net energy (maint.)	0.78	0.89	Mcal/lbs	0.01	Calculation *	Auto-2014/11/21	Auto-2014/12/08
Net energy (gain)	0.52	0.60	Mcal/lbs	0.01	Calculation *	Auto-2014/11/21	Auto-2014/12/08
Digestible energy	1.44	1.65	Mcal/lbs	0.01	Calculation *	Auto-2014/11/21	Auto-2014/12/08
Metabolizable energy	1.30	1.48	Mcal/lbs	0.01	Calculation *	Auto-2014/11/21	Auto-2014/12/08
Sulfur (total)	0.76	0.87	%	0.01	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Phosphorus (total)	1.06	1.21	%	0.01	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Potassium (total)	1.30	1.48	%	0.01	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Magnesium (total)	0.34	0.39	%	0.01	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Calcium (total)	0.05	0.06	%	0.01	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Sodium (total)	0.25	0.29	%	0.01	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

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Sample ID: D1-20141118 Lab Number: **12364768** (con't)							
Iron (total)	99.8	114	ppm	5.0	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Manganese (total)	19.8	22.6	ppm	1.0	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Copper (total)	8.1	9.3	ppm	1.0	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Zinc (total)	77.8	88.9	ppm	1.0	AOAC 985.01 (mod) *	trh1-2014/11/21	jpt1-2014/11/21
Aflatoxin B1	n.d.		ppb	1.00	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Aflatoxin B2	n.d.		ppb	1.00	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Aflatoxin G1	n.d.		ppb	1.00	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Aflatoxin G2	n.d.		ppb	1.00	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Aflatoxin summation	n.d.		ppb	1.00	Calculation *	Auto-2014/12/08	Auto-2014/12/08
DON (Vomitoxin)	2.1		ppm	0.1	AOAC 2008.02 (mod) *	jcp7-2014/11/26	tjp8-2014/11/28
Fumonisin B1	0.41		ppm	0.10	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Fumonisin B2	0.12		ppm	0.10	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Fumonisin B3	n.d.		ppm	0.10	AOAC 2008.02 (mod) *	ljk9-2014/12/08	tjp8-2014/12/08
Fumonisin summation	0.53		ppm	0.10	Calculation *	Auto-2014/12/08	Auto-2014/12/08
Ochratoxin	n.d.		ppb	1.0	AOAC 2008.02 (mod) *	jcp7-2014/11/26	tjp8-2014/11/28
T-2 toxin	n.d.		ppm	0.1	AOAC 2008.02 (mod) *	jcp7-2014/11/26	tjp8-2014/11/28
Zearalenone	180		ppb	50	AOAC 2008.02 (mod) *	jcp7-2014/11/26	tjp8-2014/11/28

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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
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Detailed Method Description(s)

DDG Moisture

Analysis follows MWL FD PROC 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 PROC 70 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 PROC 26 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 PROC 21 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 PROC 19 which is based on AOAC 942.05. The sample is weighed and placed in a muffle furnace at 600 oC. 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.

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AACC 76-11 (mod)

Analysis follows WC PROC 47 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.

ICP analysis of Feeds

Analysis follows MWL ME PROC 29 which is based on AOAC 985.01. Samples have been prepared using MWL ME PROC 69 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

Full Mycotoxin

Sample analysis follows MWL LCMS PROC 05, LCMS PROC 006, LCMS PROC 007, and LCMS PROC 008 which is based on AOAC 2008.02 (modified). Samples are extracted using a polar extraction solvent and then filtration through immunoaffinity columns. The extract is analyzed by LC/MS or LC/MS/MS technology. The mycotoxins are determined by retention time, molecular weight, and molecular fragmentation ions.

AOZ

Analysis follows MWL LCMS PROC 005 which is based on AOAC 2008.02. A sample is made homogenous either through grinding, blending, or mixing. Approximately 25 g or other amount/fraction of sample is weighed into a vessel and 100 mL extraction solution or other amount/fraction of extraction solution is added. The mixture is shaken, centrifuged, and filtered. Dependent upon matrix, the extract may be washed with hexane. The extract is then placed into the freezer for no less than 1.5 hours. Extract is then diluted and filtered. The diluted extract is passed through an immunoaffinity column, rinsed with PBS, and then eluted with MeOH. At this point, the elute may be dried down by nitrogen and reconstituted with designated solution or is ready for analysis.

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DON

Analysis follows MWL LCMS PROC 006 which is based on AOAC 2008.02. A sample is made homogenous either through grinding, blending, or mixing. Approximately 3 Â± 0.01 g of sample is placed into a vessel and approximately 50 mL extraction solution is added. The mixture is shaken, centrifuged, and filtered. Extract is passed through an immunoaffinity column. The column is rinsed with PBS, and then eluted with MeOH. The eluate is dried down with nitrogen and then reconstituted with 0.1% formic acid in H2O. The eluate is ready for analyses.

Fumonisin

Analysis follows MWL LCMS PROC 005 which is based on AOAC 2008.02. A sample is made homogenous either through grinding, blending, or mixing. Approximately 25 g or other amount/fraction of sample is weighed into a vessel and 100 mL extraction solution or other amount/fraction of extraction solution is added. The mixture is shaken, centrifuged, and filtered. Dependent upon matrix, the extract may be washed with hexane. The extract is then placed into the freezer for no less than 1.5 hours. Extract is then diluted and filtered. The diluted extract is passed through an immunoaffinity column, rinsed with PBS, and then eluted with MeOH. At this point, the elute may be dried down by nitrogen and reconstituted with designated solution or is ready for analysis.

T2

Analysis follows MWL LCMS PROC 005 which is based on AOAC 2008.02. A sample is made homogenous either through grinding, blending, or mixing. Approximately 25 g or other amount/fraction of sample is weighed into a vessel and 100 mL extraction solution or other amount/fraction of extraction solution is added. The mixture is shaken, centrifuged, and filtered. Dependent upon matrix, the extract may be washed with hexane. The extract is then placed into the freezer for no less than 1.5 hours. Extract is then diluted and filtered. The diluted extract is passed through an immunoaffinity column, rinsed with PBS, and then eluted with MeOH. At this point, the elute may be dried down by nitrogen and reconstituted with designated solution or is ready for analysis.