

Bushmills Ethanol, Inc
Atwater, Minnesota

IOWA TESTING LAB REPORT NO: 07-F25592
DATE: 11/20/2007
METHOD: AOAC; AACC

PROXIMATE ANALYSIS, CALCULATED DE, ME AND NE VALUES FOR SWINE, AND MINERAL AND AMINO ACID CONTENT OF DDGS.¹

Proximate Analysis:

Dry Matter (%)	Crude Protein (%)	Crude Fat (%)	AH Fat (%)	Crude Fiber (%)	Ash (%)	Nitrogen Free Extract (%)	Carbohydrates (%)	Acid Detergent Fiber (%)	Total Digestible Nutrients (%)	Digestible Energy ² (kcal/kg)	Metabolizable Energy ² (kcal/kg)	Net Energy ³ (kcal/kg)
88.23	32.98	11.74	ND ⁴	8.94	7.31	ND ⁴	ND ⁴	14.09	ND ⁴	3892	3634	1972

Calcium (%)	Phosphorus (%)	Potassium (%)	Magnesium (%)	Sulfur (%)	Sodium (%)	Chloride (%)	Zinc (ppm)	Manganese (ppm)	Copper (ppm)	Iron (ppm)
0.02	0.77	0.93	0.31	0.90	0.16	0.16	56	11	7	90

Amino Acid Analysis:

Arginine (%)	Histidine (%)	Isoleucine (%)	Leucine (%)	Lysine (%)	Methionine (%)	Cystine (%)	Phenylalanine (%)	Threonine (%)	Tryptophan (%)	Valine (%)
1.52	0.88	1.28	3.83	1.16	0.61	0.61	1.72	1.18	0.23	1.68

¹ Nutrient values expressed on 100% dry matter basis.

² DE (for swine) = 4,151 – (122 x % Ash) + (23 x %CP) + (38 x %Fat) – (64 x %Crude Fiber); ME (for swine) = DE x [1.003 - (0.0021 x %CP)], Noblet and Perez (1993).

³ NE (for swine) = 328 + (0.599 x ME) – (15 x %Ash) – (30 x %ADF), Ewan (1989).

⁴ ND – not determined.



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