

**Chippewa Valley Ethanol Co LLLP
Benson, Minnesota**

IOWA TESTING LAB REPORT NO: 04-000532
DATE: 1/27/2004
REC'D DATE: 1/19/2004
METHOD: AOAC; ICP; MOD/AOAC

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)
90.50	30.10	11.79	ND ⁴	5.62	7.57	44.92	50.54	11.78	86.81	4008	3767	2117

Mineral Analysis:

Calcium (%)	Phosphorus (%)	Potassium (%)	Magnesium (%)	Sulfur (%)	Sodium (%)	Chloride (%)	Zinc (ppm)	Manganese (ppm)	Copper (ppm)	Iron (ppm)
0.07	0.74	1.08	0.33	0.65	0.04	0.18	53	21	3	107

Amino Acid Analysis:

Arginine (%)	Histidine (%)	Isoleucine (%)	Leucine (%)	Lysine (%)	Methionine (%)	Cystine (%)	Phenylalanine (%)	Threonine (%)	Tryptophan (%)	Valine (%)
1.33	0.84	1.15	3.43	0.83	0.60	0.67	1.43	1.15	0.23	1.61

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.

APPARENT AND STANDARDIZED TRUE ILEAL DIGESTIBILITY OF CRUDE PROTEIN AND AMINO ACIDS OF DDGS FOR SWINE (100% DRY MATTER BASIS).

	DM	CP	Agr	His	Ile	Leu	Lys	Met	Phe	Thr	Trp	Val	Ala	Asp	Cys	Glu	Gly	Pro	Ser
TOTAL, %	90.8	35.76	1.65	0.93	1.27	4.13	0.96	0.67	1.69	1.32	0.30	1.69	2.60	2.30	0.63	6.12	1.37	2.58	1.68
AID¹, %		70.13	82.53	77.12	76.77	80.99	61.76	84.31	80.51	66.56	64.27	74.74	78.03	67.11	66.90	79.76	56.46	60.02	72.27
A DIG², %		25.08	1.36	0.72	0.97	3.35	0.59	0.57	1.36	0.88	0.19	1.26	2.03	1.54	0.42	4.88	0.77	1.55	1.21
SID³, %		79.06	90.61	79.16	78.87	81.74	63.96	85.37	83.64	72.69	70.88	77.44	81.35	71.08	69.51	81.34	83.17	120.55	77.92
S DIG⁴, %		28.27	1.50	0.74	1.00	3.38	0.61	0.57	1.41	0.96	0.21	1.31	2.11	1.63	0.44	4.98	1.14	3.11	1.31
OTHER	NDF, %	ADF, %	ADICP⁵, %	Mean particle size, µm	Soluble CP, %	Ash, %	Bulk density, lbs/ft3	pH											
	25.67	10.11	3.29	223.46	26.93	3.70	26.40	3.60											

- ¹ AID = Apparent Ileal Digestibility
- ² A DIG = Apparent Ileal Digestible CP & Amino Acids
- ³ SID = Standardized True Ileal Digestibility
- ⁴ S DIG = Standardized True Ileal Digestible CP & Amino Acids
- ⁵ ADICP = Acid Detergent Insoluble Crude Protein



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