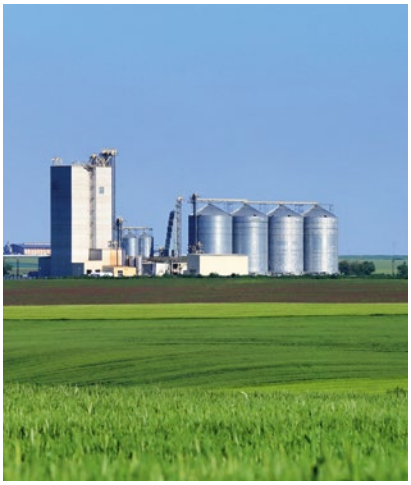
2024 EVONIK FEED INGREDIENT REPORT

AMINONIR®









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Dear Customer,

Evonik Animal Nutrition is committed to providing our customers with the most comprehensive and up-to-date information on feed ingredients. As part of this commitment, we have compiled a detailed report on the amino acid, crude fat, crude fiber, sugar, starch, and ash contents of corn, soybean meal, corn-based dried distiller's grains with solubles (DDGS), corn germ meal, wheat middlings, oats, meat and bone meal, poultry by-product meal and feather meal for 2024. This report includes data on corn and soybean meal segmented by region, as well as data on corn germ meal, oats, poultry by-product and feather meal for the first time this year.

Our analysis of the 2024 corn crop revealed a slightly lower crude protein content compared to the previous year, but a higher value of starch. The amino acid profile was similar to 2023, with slightly lower LYS, ARG and HIS values. The 2024 soybean meal crop showed a decrease in crude protein compared to the previous year, with regional differences in crude protein content. The average crude protein content for DDGS was lower in 2024 than the previous year, but the oil content was higher.

We also reported on the processing conditions of soybean meal and DDGS. Soybean meal showed very good quality with optimum values for trypsin inhibitor activity (TIA) and reactive lysine. A small population of DDGS exhibited heat damage, with a reactive lysine to total lysine ratio below 70%.

We take responsibility for generating this report, but its success is due to the samples collected by our customers and analyzed through Evonik's AMINONIR® laboratory service. By compiling this report, we aim to provide our customers with pertinent information and insight into general trends in each year's crops. For more comprehensive feed ingredient information, please contact our Evonik technical team to access the AMINODat® 6.3 database. Thank you to our customers who participated in the 2024 feed ingredient report. Without your participation, this report would not be possible.

Yours sincerely,

Paulo Sergio Teixeira
Regional Vice President Animal Nutrition



Corn

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Region	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	571	Mean (%)	7.59	3.47	64.75	1.69	1.17	1.78	0.16	0.17	0.32	0.23	0.27	0.06	0.35	0.26	0.90	0.36	0.21	0.36
		SD	0.58	0.23	0.91	0.28	0.07	0.13	0.01	0.01	0.02	0.02	0.02	0.00	0.03	0.02	0.08	0.03	0.02	0.03
		CV (%)	7.64	6.63	1.41	16.57	5.98	7.30	6.25	5.88	6.25	8.70	7.41	0.00	8.57	7.69	8.89	8.33	9.52	8.33
		Min (%)	5.97	2.80	61.40	1.00	0.90	1.40	0.12	0.14	0.26	0.19	0.21	0.05	0.27	0.20	0.67	0.28	0.17	0.26
		Max (%)	9.84	4.20	67.20	3.20	1.50	2.20	0.20	0.20	0.41	0.29	0.34	0.07	0.44	0.35	1.24	0.46	0.27	0.49
Western Corn belt (IA, KS, MN, MO, NE, SD)	175	Mean (%)	7.33	3.48	65.01	1.80	1.15	1.75	0.15	0.16	0.31	0.23	0.26	0.06	0.33	0.25	0.87	0.35	0.21	0.35
		SD	0.51	0.19	0.71	0.27	0.06	0.12	0.01	0.01	0.02	0.01	0.02	0.00	0.02	0.02	0.08	0.02	0.02	0.03
		CV (%)	6.96	5.46	1.09	15.00	5.22	6.86	6.67	6.25	6.45	4.35	7.69	0.00	6.06	8.00	9.20	5.71	9.52	8.57
		Min (%)	5.97	3.00	62.80	1.20	1.00	1.50	0.12	0.14	0.26	0.19	0.21	0.05	0.27	0.20	0.67	0.28	0.17	0.27
		Max (%)	8.99	4.00	67.20	2.50	1.30	2.00	0.19	0.19	0.38	0.26	0.32	0.07	0.41	0.31	1.08	0.42	0.25	0.44
Eastern Corn Belt (IL, IN, OH)	33	Mean (%)	7.37	3.31	65.43	1.41	1.13	1.75	0.15	0.16	0.31	0.22	0.26	0.06	0.33	0.25	0.89	0.35	0.21	0.35
		SD	0.32	0.25	0.95	0.20	0.05	0.13	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.01	0.05	0.01	0.01	0.02
		CV (%)	4.34	7.55	1.45	14.18	4.42	7.43	6.67	6.25	3.23	4.55	3.85	0.00	6.06	4.00	5.62	2.86	4.76	5.71
		Min (%)	6.70	2.80	63.30	1.10	1.00	1.50	0.14	0.15	0.30	0.20	0.24	0.05	0.31	0.23	0.76	0.32	0.19	0.31
		Max (%)	8.15	3.90	67.10	2.00	1.20	2.00	0.17	0.18	0.34	0.25	0.29	0.06	0.38	0.28	1.02	0.38	0.23	0.40
Midsouth (AR, KY, LA, MS, OK, TN, TX)	234	Mean (%)	7.84	3.51	64.42	1.68	1.18	1.81	0.16	0.17	0.34	0.24	0.28	0.06	0.36	0.27	0.93	0.37	0.22	0.37
		SD	0.59	0.25	0.88	0.22	0.08	0.13	0.01	0.01	0.02	0.02	0.02	0.00	0.03	0.02	0.09	0.03	0.02	0.03
		CV (%)	7.53	7.12	1.37	13.10	6.78	7.18	6.25	5.88	5.88	8.33	7.14	0.00	8.33	7.41	9.68	8.11	9.09	8.11
		Min (%)	6.33	2.80	61.40	1.10	1.00	1.50	0.14	0.15	0.29	0.21	0.23	0.05	0.30	0.21	0.71	0.30	0.18	0.28
		Max (%)	9.84	4.20	66.60	2.40	1.50	2.20	0.20	0.20	0.41	0.29	0.34	0.07	0.44	0.35	1.24	0.46	0.27	0.49
Southeast (AL, GA, FL, NC, SC)	75	Mean (%)	7.62	3.51	64.55	1.60	1.20	1.79	0.16	0.17	0.33	0.24	0.27	0.06	0.36	0.26	0.89	0.36	0.22	0.36
		SD	0.44	0.20	0.91	0.14	0.07	0.16	0.01	0.01	0.02	0.01	0.02	0.00	0.02	0.02	0.07	0.02	0.01	0.03
		CV (%)	5.77	5.70	1.41	8.75	5.83	8.94	6.25	5.88	6.06	4.17	7.41	0.00	5.56	7.69	7.87	5.56	4.55	8.33
		Min (%)	6.25	3.00	62.20	1.30	1.10	1.40	0.14	0.15	0.29	0.21	0.23	0.05	0.31	0.21	0.69	0.30	0.18	0.28
		Max (%)	8.66	4.00	66.40	2.10	1.40	2.20	0.18	0.19	0.37	0.27	0.31	0.07	0.41	0.30	1.03	0.41	0.25	0.42
East Coast (MD, NJ, PA, VA)	33	Mean (%)	7.59	3.35	65.12	1.39	1.15	1.73	0.15	0.17	0.32	0.23	0.27	0.06	0.35	0.26	0.92	0.36	0.22	0.37
		SD	0.49	0.17	1.08	0.26	0.09	0.11	0.01	0.01	0.02	0.02	0.02	0.00	0.03	0.02	0.07	0.02	0.01	0.03
		CV (%)	6.46	5.07	1.66	18.71	7.83	6.36	6.67	5.88	6.25	8.70	7.41	0.00	8.57	7.69	7.61	5.56	4.55	8.11
		Min (%)	6.62	3.00	62.90	1.00	0.90	1.60	0.14	0.15	0.29	0.20	0.24	0.05	0.30	0.23	0.79	0.31	0.19	0.31
		Max (%)	8.54	3.80	67.00	2.00	1.30	2.00	0.18	0.19	0.37	0.26	0.30	0.06	0.40	0.30	1.11	0.40	0.25	0.43
West Coast (CA, UT)	21	Mean (%)	7.18	3.42	65.35	2.13	1.13	1.75	0.15	0.16	0.31	0.23	0.25	0.06	0.33	0.24	0.83	0.34	0.20	0.33
		SD	0.58	0.22	0.73	0.36	0.05	0.11	0.01	0.01	0.02	0.01	0.02	0.00	0.02	0.02	0.11	0.03	0.02	0.04
		CV (%)	8.08	6.43	1.12	16.90	4.42	6.29	6.67	6.25	6.45	4.35	8.00	0.00	6.06	8.33	13.25	8.82	10.00	12.12
		Min (%)	6.20	3.20	63.80	1.50	1.10	1.60	0.12	0.14	0.27	0.21	0.22	0.05	0.30	0.20	0.67	0.29	0.17	0.26
		Max (%)	8.01	3.80	66.10	3.20	1.20	2.00	0.17	0.18	0.35	0.24	0.28	0.06	0.36	0.28	0.99	0.38	0.23	0.39

Crop Year	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
2020	552	Mean (%)	7.37	3.47	65.07	1.66	1.18	1.79	0.15	0.16	0.32	0.24	0.27	0.06	0.36	0.25	0.87	0.35	0.21	0.36
2021	743	Mean (%)	7.37	3.47	65.01	1.64	1.18	1.87	0.15	0.16	0.32	0.24	0.26	0.06	0.35	0.25	0.85	0.35	0.21	0.35
2022	690	Mean (%)	7.67	3.46	64.39	1.70	1.19	1.85	0.16	0.17	0.33	0.24	0.27	0.06	0.35	0.26	0.92	0.36	0.22	0.37
2023	555	Mean (%)	7.63	3.54	64.50	1.71	1.20	1.85	0.16	0.17	0.33	0.24	0.27	0.06	0.36	0.26	0.90	0.36	0.22	0.36
2024	571	Mean (%)	7.59	3.47	64.75	1.69	1.17	1.78	0.16	0.17	0.32	0.23	0.27	0.06	0.35	0.26	0.90	0.36	0.21	0.36

Dry matter of corn is standardized at 88 %.

	Digestibility Coefficients[1] (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	87	81	84	74	78	73	88	85	88	82	86	87
Poultry	94	87	91	88	86	84	89	96	92	93	95	92

[1] AMINODat® 6.3

Soybean Meal (SBM)

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Region	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	347	Mean (%)	46.40	2.40	0.60	10.59	6.50	3.76	0.61	0.66	1.27	2.84	1.79	0.63	3.36	2.11	3.51	2.20	1.20	2.35
		SD	0.70	0.44	0.14	0.49	0.18	0.40	0.01	0.01	0.02	0.04	0.02	0.01	0.06	0.03	0.05	0.03	0.02	0.04
		CV (%)	1.51	18.33	23.33	4.63	2.77	10.64	1.64	1.52	1.57	1.41	1.12	1.59	1.79	1.42	1.42	1.36	1.67	1.70
		Min (%)	42.90	1.60	0.30	8.90	6.20	2.90	0.56	0.61	1.17	2.61	1.66	0.58	3.06	1.94	3.23	2.03	1.10	2.17
		Max (%)	48.39	3.70	1.80	11.50	7.30	5.90	0.64	0.68	1.32	2.95	1.86	0.65	3.55	2.19	3.66	2.28	1.25	2.46
Western Corn belt (IA, KS, MN, MO, NE, SD)	233	Mean (%)	46.26	2.37	0.60	10.74	6.46	3.77	0.61	0.66	1.27	2.83	1.79	0.63	3.35	2.10	3.50	2.19	1.20	2.34
		SD	0.57	0.35	0.11	0.36	0.12	0.36	0.01	0.01	0.02	0.03	0.02	0.01	0.05	0.03	0.04	0.03	0.01	0.03
		CV (%)	1.23	14.77	18.33	3.35	1.86	9.55	1.64	1.52	1.57	1.06	1.12	1.59	1.49	1.43	1.14	1.37	0.83	1.28
		Min (%)	43.33	1.60	0.30	9.50	6.20	3.00	0.57	0.62	1.20	2.69	1.68	0.59	3.10	1.96	3.27	2.05	1.13	2.18
		Max (%)	47.79	3.50	1.30	11.50	6.80	5.70	0.63	0.68	1.31	2.93	1.84	0.65	3.49	2.17	3.60	2.25	1.24	2.42
Eastern Corn Belt (IL, IN, OH)	48	Mean (%)	46.91	2.19	0.55	10.62	6.55	3.64	0.62	0.66	1.28	2.86	1.81	0.64	3.41	2.13	3.54	2.21	1.21	2.37
		SD	0.70	0.34	0.08	0.35	0.28	0.42	0.01	0.01	0.02	0.04	0.03	0.01	0.07	0.03	0.06	0.03	0.02	0.04
		CV (%)	1.49	15.53	14.55	3.30	4.27	11.54	1.61	1.52	1.56	1.40	1.66	1.56	2.05	1.41	1.69	1.36	1.65	1.69
		Min (%)	45.44	1.70	0.40	9.90	6.20	2.90	0.60	0.62	1.23	2.77	1.75	0.62	3.26	2.06	3.42	2.15	1.18	2.29
		Max (%)	48.39	3.10	0.70	11.50	7.30	4.70	0.64	0.68	1.32	2.95	1.86	0.65	3.55	2.19	3.66	2.28	1.25	2.46
Midsouth (AR)	13	Mean (%)	47.32	3.42	0.40	9.47	6.82	3.57	0.61	0.65	1.27	2.84	1.83	0.64	3.37	2.16	3.59	2.24	1.21	2.41
		SD	0.26	0.16	0.06	0.26	0.17	0.21	0.00	0.01	0.01	0.02	0.01	0.00	0.02	0.01	0.03	0.01	0.01	0.01
		CV (%)	0.55	4.68	15.00	2.75	2.49	5.88	0.00	1.54	0.79	0.70	0.55	0.00	0.59	0.46	0.84	0.45	0.83	0.41
		Min (%)	47.01	3.10	0.30	8.90	6.60	3.40	0.60	0.64	1.25	2.81	1.81	0.64	3.34	2.14	3.56	2.23	1.20	2.39
		Max (%)	47.75	3.70	0.50	10.00	7.30	4.20	0.61	0.66	1.28	2.88	1.84	0.65	3.41	2.18	3.64	2.26	1.23	2.43
Southeast (AL, GA, SC)	40	Mean (%)	46.44	2.39	0.71	10.03	6.59	3.89	0.61	0.65	1.26	2.81	1.79	0.63	3.35	2.11	3.51	2.20	1.19	2.36
		SD	0.98	0.58	0.22	0.50	0.14	0.50	0.01	0.01	0.02	0.05	0.03	0.01	0.08	0.05	0.07	0.04	0.02	0.05
		CV (%)	2.11	24.27	30.99	4.99	2.12	12.85	1.64	1.54	1.59	1.78	1.68	1.59	2.39	2.37	1.99	1.82	1.68	2.12
		Min (%)	42.90	1.70	0.40	9.00	6.20	3.10	0.56	0.61	1.17	2.61	1.66	0.58	3.06	1.94	3.23	2.03	1.10	2.17
		Max (%)	47.57	3.50	1.80	10.80	6.90	5.90	0.62	0.67	1.29	2.90	1.84	0.65	3.44	2.18	3.61	2.26	1.23	2.43
East Coast (MD, PA)	13	Mean (%)	46.14	2.88	0.53	10.46	6.45	3.95	0.60	0.65	1.26	2.82	1.79	0.63	3.34	2.09	3.49	2.19	1.20	2.35
		SD	0.67	0.39	0.14	0.31	0.10	0.56	0.01	0.01	0.02	0.05	0.03	0.01	0.06	0.03	0.06	0.03	0.02	0.04
		CV (%)	1.45	13.54	26.42	2.96	1.55	14.18	1.67	1.54	1.59	1.77	1.68	1.59	1.80	1.44	1.72	1.37	1.67	1.70
		Min (%)	44.51	2.20	0.40	10.00	6.30	3.30	0.58	0.63	1.21	2.73	1.72	0.61	3.19	2.02	3.36	2.11	1.16	2.24
		Max (%)	46.93	3.50	0.70	11.00	6.60	5.20	0.62	0.67	1.29	2.88	1.82	0.64	3.43	2.12	3.56	2.23	1.22	2.40

Crop Year	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
2020	351	Mean (%)	46.20	2.46		10.16	6.33	3.98	0.61	0.66	1.26	2.81	1.79	0.63	3.34	2.08	3.49	2.19	1.19	2.34
2021	400	Mean (%)	46.63	2.25		10.36	6.66	3.77	0.61	0.66	1.27	2.85	1.81	0.63	3.39	2.12	3.53	2.21	1.20	2.37
2022	423	Mean (%)	46.12	2.26		10.86	6.50	3.82	0.61	0.65	1.26	2.83	1.79	0.63	3.32	2.09	3.49	2.19	1.20	2.34
2023	258	Mean (%)	46.64	2.33	0.55	10.40	6.53	3.84	0.61	0.65	1.27	2.83	1.80	0.64	3.35	2.11	3.52	2.20	1.20	2.36
2024	347	Mean (%)	46.40	2.40	0.60	10.59	6.50	3.76	0.61	0.66	1.27	2.84	1.79	0.63	3.36	2.11	3.51	2.20	1.20	2.35

Dry matter of soybean meal is standardized at 88 %.

Digestibility Coefficients[1] (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	91	85	88	90	87	89	96	90	89	90	91	90
Poultry	90	78	84	89	83	89	91	87	87	86	89	88

[1] AMINODat® 6.3

Dried Distillers Grains with Solubles (DDGS)

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Region	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	72	Mean (%)	28.67	8.01	3.44	1.59	4.87	7.55	0.51	0.52	1.04	0.87	1.05	0.23	1.27	1.03	3.19	1.34	0.75	1.37
		SD	1.47	0.77	1.30	0.44	0.35	0.44	0.04	0.03	0.07	0.07	0.05	0.02	0.11	0.06	0.18	0.08	0.03	0.09
		CV (%)	5.13	9.61	37.79	27.67	7.19	5.83	7.84	5.77	6.73	8.05	4.76	8.70	8.66	5.83	5.64	5.97	4.00	6.57
		Min (%)	25.24	6.40	1.60	0.90	4.10	6.70	0.41	0.41	0.85	0.71	0.93	0.19	0.97	0.89	2.76	1.17	0.66	1.18
		Max (%)	31.65	10.00	6.70	3.10	5.80	8.50	0.59	0.57	1.18	0.99	1.15	0.26	1.49	1.13	3.56	1.49	0.81	1.51

Crop Year	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
2019	2,745	Mean (%)	27.23	8.81	4.55	1.23	4.81	7.15	0.52	0.51	1.03	0.81	1.01	0.22	1.22	0.98	3.02	1.30	0.72	1.30
2020	1,952	Mean (%)	28.08	8.68	3.93	1.17	4.74	6.93	0.51	0.51	1.03	0.81	1.02	0.23	1.25	0.99	3.04	1.30	0.72	1.32
2021	2,533	Mean (%)	28.53	8.39	4.07	1.10	4.77	6.83	0.53	0.52	1.06	0.84	1.04	0.22	1.26	1.01	3.09	1.32	0.73	1.35
2022	1,624	Mean (%)	28.62	8.18	3.91	1.08	4.80	6.85	0.53	0.52	1.07	0.85	1.04	0.23	1.31	1.02	3.03	1.32	0.73	1.35
2023	42	Mean (%)	29.37	7.68	3.15	1.55	4.78	7.44	0.55	0.55	1.12	0.87	1.07	0.23	1.32	1.05	3.20	1.36	0.76	1.42
2024	72	Mean (%)	28.67	8.01	3.44	1.59	4.87	7.55	0.51	0.52	1.04	0.87	1.05	0.23	1.27	1.03	3.19	1.34	0.75	1.37

Dry matter of DDGS is standardized at 88 %.

	Digestibility Coefficients[1] (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	83	75	76	63	72	76	81	78	85	77	79	82
Poultry	83	78	81	61	69	81	80	77	84	75	71	78

[1] AMINODat® 6.3

Wheat Middlings

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	25	Mean (%)	15.72	3.60	23.39	5.08	4.68	7.82	0.23	0.32	0.55	0.65	0.50	0.25	1.07	0.49	0.93	0.72	0.42	0.60
		SD	0.63	0.25	3.66	0.48	0.32	0.84	0.01	0.01	0.02	0.04	0.02	0.01	0.06	0.02	0.04	0.03	0.02	0.03
		CV (%)	4.01	6.94	15.65	9.45	6.84	10.74	4.35	3.13	3.64	6.15	4.00	4.00	5.61	4.08	4.30	4.17	4.76	5.00
		Min (%)	13.81	2.90	19.40	3.90	3.60	5.10	0.21	0.29	0.51	0.53	0.43	0.20	0.85	0.43	0.84	0.61	0.35	0.55
		Max (%)	16.68	4.00	38.50	5.80	5.30	9.20	0.24	0.34	0.58	0.70	0.53	0.27	1.14	0.52	0.99	0.75	0.45	0.65

Dry matter of wheat middlings is standardized at 88 %.

	Digestibility Coefficients[1] (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	76	72	74	46	63	73	72	72	73	62	77	73
Poultry	81	76	78	78	73	79	78	81	79	77	79	79

[1] AMINODat® 6.3

Corn Germ Meal

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	10	Mean (%)	13.82	17.50	19.55	5.93	5.33	5.03	0.24	0.26	0.51	0.77	0.51	0.17	1.10	0.41	0.96	0.67	0.40	0.55
		SD	0.26	0.70	1.11	0.17	0.23	0.33	0.00	0.00	0.01	0.03	0.01	0.00	0.04	0.01	0.01	0.01	0.01	0.01
		CV (%)	1.88	4.00	5.68	2.87	4.32	6.56	0.00	0.00	1.96	3.90	1.96	0.00	3.64	2.44	1.04	1.49	2.50	1.82
		Min (%)	13.37	16.20	18.30	5.60	4.90	4.60	0.23	0.25	0.49	0.73	0.50	0.16	1.04	0.41	0.94	0.65	0.38	0.54
		Max (%)	14.18	18.50	21.90	6.10	5.60	5.50	0.24	0.27	0.52	0.80	0.52	0.17	1.15	0.42	0.98	0.69	0.41	0.56

Dry matter of corn germ meal is standardized at 88%.

	Digestibility Coefficients[1] (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	79	63	70	68	60	57	88	72	83	75	76	76
Poultry	84	64	73	81	79	85	91	87	88	87	85	88

[1] AMINODat® 6.3

Oats

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Starch	Sugar	Ash	Crude Fiber	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	23	Mean (%)	10.91	4.25	38.09	0.93	2.93	10.46	0.17	0.30	0.48	0.44	0.36	0.14	0.71	0.39	0.77	0.52	0.23	0.53
		SD	0.27	0.20	1.32	0.08	0.18	0.57	0.01	0.01	0.02	0.01	0.01	0.00	0.02	0.01	0.02	0.02	0.01	0.02
		CV (%)	2.47	4.71	3.47	8.60	6.14	5.45	5.88	3.33	4.17	2.27	2.78	0.00	2.82	2.56	2.60	3.85	4.35	3.77
		Min (%)	10.37	3.90	35.50	0.80	2.60	9.40	0.16	0.29	0.45	0.42	0.34	0.13	0.66	0.37	0.72	0.50	0.22	0.50
		Max (%)	11.48	4.70	39.90	1.10	3.40	11.30	0.18	0.33	0.52	0.47	0.39	0.15	0.76	0.42	0.82	0.56	0.25	0.58

Dry matter of oats is standardized at 88%.

	Digestibility Coefficients[1] (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	86	72	77	78	74	79	91	84	85	83	86	87
Poultry	87	84	85	87	84	80	94	89	90	88	93	93

[1] AMINODat® 6.3

Meat and Bone Meal (MBM)

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Ash	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	31	Mean (%)	50.75	11.41	25.47	0.69	0.42	1.13	2.53	1.61	0.33	3.40	1.46	3.09	2.14	0.91	1.71
		SD	3.37	1.89	4.32	0.10	0.11	0.16	0.31	0.19	0.06	0.20	0.23	0.38	0.28	0.16	0.20
		CV (%)	6.64	16.56	16.96	14.49	26.19	14.16	12.25	11.80	18.18	5.88	15.75	12.30	13.08	17.58	11.70
		Min (%)	44.39	6.80	17.40	0.52	0.30	0.87	2.09	1.32	0.25	2.99	1.14	2.54	1.75	0.73	1.42
		Max (%)	57.41	15.20	33.50	0.90	0.86	1.43	3.17	1.94	0.47	3.74	1.84	3.87	2.90	1.24	2.15

Dry matter of meat and bone meal is standardized at 91 %.

Digestibility Coefficients[1] (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	84	69	85	80	82	79	88	84	83	84	81	85
Poultry	72	30	58	70	63	56	76	90	71	70	71	71

[1] AMINODat® 6.3

Poultry By-Product Meal

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Ash	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	12	Mean (%)	60.38	11.53	18.75	0.99	0.76	1.76	3.00	2.10	0.47	3.99	2.12	3.86	2.80	1.04	2.24
		SD	1.57	2.24	2.00	0.16	0.34	0.27	0.39	0.12	0.04	0.13	0.12	0.26	0.34	0.09	0.16
		CV (%)	2.60	19.43	10.67	16.16	44.74	15.34	13.00	5.71	8.51	3.26	5.66	6.74	12.14	8.65	7.14
		Min (%)	56.64	10.00	14.20	0.74	0.44	1.43	2.51	1.96	0.43	3.67	1.95	3.54	2.43	0.92	2.04
		Max (%)	62.52	18.10	21.90	1.16	1.22	2.13	3.56	2.27	0.56	4.18	2.36	4.24	3.32	1.20	2.46

Dry matter of poultry by-product meal is standardized at 91 %.

Digestibility Coefficients[1] (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	77	52	69	79	76	88	87	81	80	79	81	82
Poultry	77	56	71	75	74	87	81	76	78	76	77	78

[1] AMINODat® 6.3

Feather Meal

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Ash	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions	11	Mean (%)	82.88	7.10	1.84	0.56	3.83	4.42	2.17	3.78	0.66	5.62	3.86	7.00	6.07	1.05	4.13
		SD	0.49	0.83	0.42	0.07	0.49	0.41	0.64	0.06	0.12	0.17	0.13	0.30	0.11	0.46	0.13
		CV (%)	0.59	11.69	22.83	12.50	12.79	9.28	29.49	1.59	18.18	3.02	3.37	4.29	1.81	43.81	3.15
		Min (%)	81.85	5.50	1.00	0.48	3.00	3.73	1.43	3.68	0.52	5.40	3.63	6.62	5.97	0.57	3.95
		Max (%)	83.58	8.50	2.30	0.66	4.50	5.05	3.06	3.87	0.82	5.85	4.01	7.44	6.30	1.68	4.34

Dry matter of feather meal is standardized at 91 %.

	Digestibility Coefficients[1] (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	67	59	59	54	69	70	81	82	76	77	65	79
Poultry	63	45	48	56	54	54	68	73	68	68	58	69

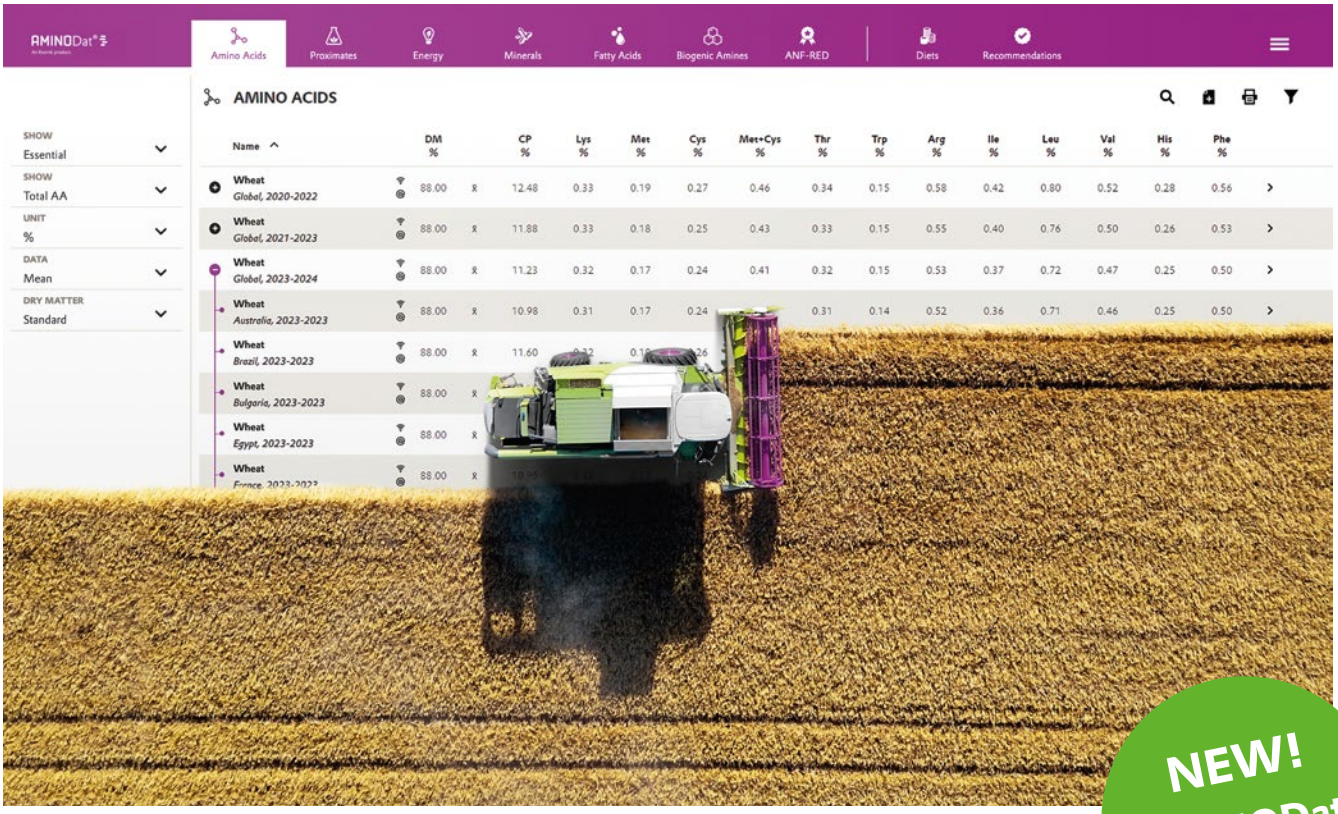
[1] AMINODat® 6.3

Soy Products and DDGS Quality Report

AMINONIR®

The processing conditions of soybean meal and DDGS were assessed using traditional laboratory assays, including Protein Solubility in KOH, Trypsin Inhibitor Activity and Reactive Lysine. Evonik has expanded its near-infrared spectroscopy (NIRS) portfolio to include AMINONIR® RED 2.0, a service that predicts the quality of heat-exposed soy products and corn-based DDGS based on these traditional laboratory assays. The data presented in this report was developed using the parameters predicted by AMINONIR® RED 2.0 on newly harvested soybean meal and DDGS samples in 2024.

Material	n Obs	Variable	Mean	Std Dev	CV	Minimum	Maximum
DDGS, Corn	72	Protein Solubility in KOH (%)	34.09	4.40	12.91	24.60	43.20
		Reactive Lysine (%)	0.63	0.07	11.11	0.46	0.77
		Reactive Lysine/Total Lysine Ratio (%)	77.42	5.30	6.85	59.78	86.70
Soybean Meal	258	Protein Solubility in KOH (%)	79.30	2.30	2.90	73.30	87.30
		Trypsin Inhibitor Activity (mg/g)	3.30	0.40	12.12	2.00	4.50
		Reactive Lysine (%)	2.50	0.00	0.00	2.30	2.60
		Reactive Lysine/Total Lysine Ratio (%)	88.20	0.70	0.79	85.80	90.00



NEW! AMINODat® 6.3 Update

OUR EXTENSIVE WEB-BASED DATABASE FOR ANIMAL NUTRITIONISTS
NOW WITH FRESH CROP DATA FROM THE USA!

Our extensive nutrition database is the most comprehensive in the world and supports you in mastering the challenge of reducing costs while meeting livestock needs. It covers over 2,500 raw materials and more than 870,000 samples from all over the world, based on more than 46,000,000 analytical results.

With a new update, AMINODat® 6.3 now includes:

- **State specific data for new harvest Corn and Soybean Meal in the USA:**
  - 29 US States covered for Corn
  - 16 US States covered for Soybean Meal
- **Fresh data sets on Bakery Meal, Blood Meal, Corn Germ Meal, Corn DDGS, Feather Meal, Meat and Bone Meal, Oats, Poultry By-Product Meal, Canola Meal, Soybean Hulls, Wheat and Wheat Middlings sampled in the USA.**

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