

2024

CANADIAN FEED INGREDIENT REPORT



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Dear Customer,

Jefo Nutrition, in collaboration with Evonik Animal Nutrition, is pleased to present the inaugural Canadian Feed Ingredient Crop Survey Report for 2024. This comprehensive analysis marks a significant milestone as the first of its kind tailored to Canada's unique agricultural landscape. Our commitment to providing cutting-edge insights on feed ingredients drives this initiative to better serve our valued partners.

The 2024 Canadian Feed Ingredient Report includes detailed data on amino acid, crude fat, crude fiber, sugar, starch, and ash contents for key feed ingredients such as wheat, barley, corn, canola meal, soybean meal, and peas. We also incorporate data on specific by-products such as corn DDGS and wheat middlings. Regional segmentation of wheat, corn, and soybean meal provides further granularity to the analysis, highlighting significant trends and regional variability.

KEY HIGHLIGHTS OF THE 2024 REPORT:

Corn: The survey revealed regional differences in crude protein and starch content, with notable variations influenced by growing conditions across Canada.

Soybean Meal: Analysis showed variability in crude protein and amino acid profiles among regions, with a focus on essential amino acids like lysine and methionine. Higher levels of trypsin inhibitor activity (TIA) were observed in soybean meal processed in the US.

Canola Meal and Barley: Canola meal demonstrated consistent protein content, while barley showed promising levels of crude fiber and starch as energy sources.

By-Product Analysis: Ingredients such as wheat middlings and corn DDGS were evaluated for their nutritional profiles, highlighting their potential contributions to Canadian livestock diets. A small population of DDGS exhibited heat damage, with a reactive lysine to total lysine ratio below 70%.

Jefo's commitment to scientific excellence ensures that this report is underpinned by rigorous data collection and analysis. Samples were sourced from across Canada and analyzed using Evonik's AMINONIR® laboratory services. The success of this initiative would not have been possible without the contributions of our partners who submitted samples and supported the evaluation process.

We hope that the insights from this report will help inform your feed formulation strategies and drive improvements in animal performance and profitability. For more detailed information, or to discuss how Jefo can assist in optimizing your feed programs, please contact our technical support team.

Thank you for your continued trust and collaboration. Together, we are shaping the future of animal nutrition in Canada.

Yours sincerely,



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Sales Director, Canada
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Corn

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Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phosphorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada & USA)	56	Mean (%)	7.25	3.63	1.77	1.23	65.00	2.64	10.02	1.95	0.24	0.18	3903	0.15	0.17	0.32	0.24	0.26	0.06	0.35	0.24	0.83	0.34	0.21	0.35
		SD	0.51	0.19	0.14	0.09	1.28	0.21	0.57	0.38	0.01	0.01	13.25	0.01	0.01	0.02	0.02	0.02	0.00	0.03	0.02	0.08	0.02	0.01	0.03
		CV (%)	7.06	5.34	8.08	7.01	1.97	7.81	5.65	19.32	5.27	5.27	0.34	6.96	5.20	6.04	6.71	6.96	5.13	7.09	7.93	9.95	7.15	6.29	9.55
		Min (%)	6.42	3.30	1.50	1.10	61.30	2.20	8.70	0.90	0.21	0.16	3882	0.13	0.15	0.28	0.21	0.23	0.05	0.31	0.21	0.69	0.30	0.19	0.29
		Max (%)	8.56	4.40	2.10	1.50	67.40	3.20	11.50	3.20	0.27	0.20	3949	0.18	0.19	0.37	0.29	0.30	0.07	0.42	0.29	1.04	0.40	0.24	0.42
Eastern Canada (ON, QC)	37	Mean (%)	6.98	3.58	1.77	1.23	65.68	2.60	9.98	1.79	0.24	0.18	3897	0.15	0.16	0.31	0.23	0.25	0.06	0.34	0.23	0.79	0.33	0.20	0.33
		SD	0.30	0.16	0.13	0.08	0.82	0.18	0.54	0.30	0.01	0.01	7.97	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.05	0.01	0.01	0.02
		CV (%)	4.24	4.39	7.12	6.64	1.25	6.88	5.44	16.70	5.13	5.13	0.20	3.97	2.94	3.34	4.07	4.05	3.19	4.33	4.83	6.70	4.03	3.47	6.48
		Min (%)	6.42	3.30	1.50	1.10	64.10	2.20	8.70	0.90	0.21	0.16	3882	0.13	0.15	0.28	0.21	0.23	0.05	0.31	0.21	0.69	0.30	0.19	0.29
		Max (%)	7.89	4.00	2.00	1.40	67.40	3.10	10.80	2.40	0.27	0.20	3916	0.17	0.18	0.34	0.25	0.28	0.06	0.37	0.27	0.95	0.37	0.22	0.39
Western Canada (MB)	10	Mean (%)	7.73	3.75	1.84	1.25	63.61	2.74	9.99	2.28	0.24	0.18	3917	0.17	0.18	0.34	0.26	0.28	0.06	0.38	0.26	0.89	0.37	0.22	0.37
		SD	0.48	0.16	0.10	0.07	0.56	0.17	0.49	0.40	0.01	0.01	9.68	0.01	0.01	0.02	0.01	0.02	0.00	0.02	0.02	0.08	0.02	0.01	0.03
		CV (%)	6.21	4.22	5.25	5.66	0.88	6.25	4.91	17.52	3.70	3.70	0.25	5.02	4.86	4.82	3.41	5.70	4.07	4.12	6.78	8.47	6.05	6.56	6.84
		Min (%)	6.96	3.50	1.70	1.20	62.70	2.50	9.20	1.80	0.23	0.17	3899	0.16	0.16	0.32	0.24	0.26	0.06	0.36	0.23	0.76	0.33	0.20	0.33
		Max (%)	8.47	4.00	2.00	1.40	64.70	3.00	11.00	3.20	0.25	0.19	3931	0.18	0.19	0.37	0.27	0.30	0.07	0.41	0.29	0.99	0.40	0.24	0.41
USA (ND)	9	Mean (%)	7.87	3.68	1.69	1.23	63.60	2.69	10.25	2.28	0.24	0.18	3915	0.17	0.18	0.34	0.25	0.28	0.06	0.38	0.27	0.94	0.37	0.22	0.39
		SD	0.37	0.31	0.22	0.13	1.16	0.31	0.76	0.13	0.02	0.01	16.15	0.01	0.01	0.01	0.02	0.01	0.00	0.02	0.01	0.05	0.02	0.01	0.02
		CV (%)	4.68	8.45	13.23	10.46	1.82	11.67	7.45	5.63	7.75	7.74	0.41	3.92	3.33	3.66	6.02	4.46	5.22	5.75	4.02	5.09	4.32	3.90	4.65
		Min (%)	7.46	3.40	1.50	1.10	61.30	2.20	9.50	2.10	0.21	0.16	3902	0.16	0.17	0.33	0.24	0.27	0.06	0.36	0.26	0.89	0.36	0.21	0.37
		Max (%)	8.56	4.40	2.10	1.50	64.80	3.20	11.50	2.40	0.27	0.20	3949	0.18	0.19	0.36	0.29	0.30	0.07	0.42	0.29	1.04	0.40	0.23	0.42

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)



Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada & USA)	34	Mean (%)	44.60	2.06	4.52	6.42	0.78	6.62	9.58	10.41	0.63	0.38	4148	0.61	0.64	1.24	2.76	1.73	0.61	3.23	2.00	3.34	2.09	1.15	2.24
		SD	1.72	0.24	0.91	0.29	0.20	1.50	1.84	0.46	0.03	0.02	22.64	0.02	0.03	0.05	0.10	0.06	0.03	0.15	0.08	0.13	0.08	0.04	0.09
		CV (%)	3.85	11.52	20.21	4.50	25.57	22.59	19.16	4.40	3.99	3.99	0.55	3.86	4.82	4.12	3.79	3.69	4.38	4.56	4.00	4.01	4.00	3.83	4.08
		Min (%)	37.85	1.70	3.10	5.70	0.40	4.80	7.20	9.30	0.57	0.34	4075	0.51	0.52	1.02	2.34	1.48	0.51	2.63	1.70	2.82	1.76	0.98	1.88
		Max (%)	47.21	2.70	6.90	7.20	1.20	11.90	16.50	11.30	0.67	0.40	4186	0.64	0.68	1.30	2.88	1.83	0.64	3.40	2.12	3.53	2.20	1.21	2.37
Eastern Canada (ON, QC)	23	Mean (%)	44.27	2.06	4.88	6.31	0.83	7.17	9.85	10.27	0.63	0.38	4148	0.61	0.64	1.24	2.74	1.71	0.60	3.21	1.98	3.31	2.07	1.14	2.23
		SD	1.92	0.23	0.90	0.24	0.16	1.52	2.02	0.43	0.02	0.01	24.34	0.03	0.04	0.06	0.12	0.07	0.03	0.17	0.09	0.15	0.09	0.05	0.10
		CV (%)	4.35	11.12	18.43	3.74	19.73	21.23	20.56	4.18	3.73	3.73	0.59	4.58	5.54	4.89	4.44	4.01	4.79	5.31	4.48	4.46	4.48	4.23	4.70
		Min (%)	37.85	1.80	3.40	5.70	0.40	4.90	7.20	9.30	0.57	0.34	4075	0.51	0.52	1.02	2.34	1.48	0.51	2.63	1.70	2.82	1.76	0.98	1.88
		Max (%)	46.36	2.70	6.90	6.80	1.20	11.90	16.50	11.10	0.67	0.40	4185	0.64	0.68	1.30	2.88	1.82	0.64	3.38	2.11	3.50	2.19	1.20	2.35
USA (MI, ND, SD)	9	Mean (%)	45.28	2.09	3.89	6.67	0.62	5.51	9.07	10.71	0.63	0.38	4148	0.61	0.64	1.24	2.78	1.77	0.62	3.25	2.04	3.40	2.13	1.17	2.27
		SD	0.98	0.29	0.21	0.29	0.22	0.38	1.25	0.41	0.03	0.02	21.90	0.01	0.02	0.02	0.05	0.03	0.01	0.08	0.04	0.07	0.04	0.02	0.05
		CV (%)	2.16	13.84	5.52	4.37	35.74	6.94	13.75	3.81	4.82	4.81	0.53	1.65	2.89	1.78	1.69	1.77	1.96	2.43	2.21	2.15	1.91	2.04	2.32
		Min (%)	44.11	1.70	3.50	6.30	0.40	4.80	7.30	9.90	0.59	0.35	4113	0.59	0.61	1.21	2.70	1.74	0.61	3.12	1.98	3.31	2.08	1.14	2.19
		Max (%)	47.21	2.60	4.30	7.20	1.00	6.20	11.30	11.30	0.67	0.40	4186	0.62	0.66	1.28	2.88	1.83	0.64	3.40	2.12	3.53	2.20	1.21	2.37

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)

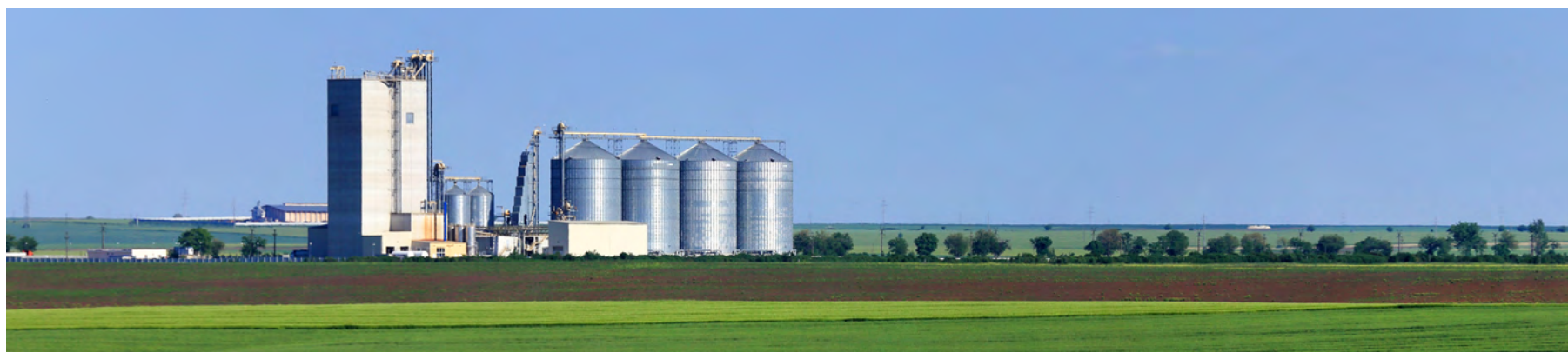
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Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada & USA)	24	Mean (%)	28.21	9.29	7.63	5.09	3.83	14.10	40.72	1.40	0.80	0.20	4366	0.52	0.53	1.07	0.85	1.02	0.21	1.27	0.99	3.18	1.34	0.76	1.33
		SD	1.99	0.88	0.62	0.33	0.81	1.02	2.10	0.70	0.07	0.02	67.38	0.04	0.04	0.08	0.08	0.08	0.02	0.10	0.09	0.28	0.11	0.06	0.11
		CV (%)	7.05	9.46	8.09	6.54	21.06	7.25	5.15	50.41	8.60	8.60	1.54	8.49	7.43	7.24	9.34	7.77	9.78	7.97	8.97	8.93	8.11	7.68	8.52
		Min (%)	23.83	7.50	6.60	4.70	2.60	12.20	37.80	0.70	0.67	0.17	4174	0.40	0.43	0.86	0.66	0.83	0.17	1.04	0.78	2.45	1.06	0.62	1.07
		Max (%)	30.84	10.90	8.70	5.70	6.40	15.90	44.80	3.40	0.95	0.24	4435	0.58	0.58	1.17	0.96	1.13	0.24	1.41	1.12	3.58	1.49	0.84	1.48
Eastern Canada (ON, QC)	18	Mean (%)	28.36	9.71	7.74	4.93	3.59	13.83	41.29	1.19	0.77	0.19	4399	0.53	0.54	1.09	0.87	1.03	0.21	1.29	1.00	3.25	1.35	0.78	1.34
		SD	1.86	0.48	0.65	0.18	0.52	0.99	2.07	0.68	0.04	0.01	24.90	0.04	0.04	0.07	0.08	0.07	0.02	0.09	0.08	0.23	0.10	0.05	0.10
		CV (%)	6.57	4.99	8.38	3.74	14.55	7.14	5.01	57.25	5.59	5.59	0.57	6.84	6.57	6.10	9.29	6.99	9.68	7.25	8.18	7.09	7.04	6.44	7.73
		Min (%)	24.84	9.00	6.60	4.70	2.60	12.20	38.20	0.70	0.67	0.17	4357	0.46	0.46	0.95	0.66	0.90	0.17	1.09	0.86	2.83	1.19	0.68	1.16
		Max (%)	30.84	10.90	8.70	5.30	4.60	15.40	44.80	3.40	0.84	0.21	4435	0.58	0.58	1.17	0.96	1.13	0.24	1.41	1.12	3.58	1.49	0.84	1.48
USA (ND)	6	Mean (%)	27.78	8.02	7.28	5.57	4.55	14.88	39.00	2.00	0.90	0.22	4267	0.50	0.50	1.02	0.80	0.99	0.21	1.19	0.96	2.96	1.28	0.72	1.30
		SD	2.47	0.41	0.37	0.16	1.12	0.71	0.95	0.32	0.03	0.01	57.14	0.06	0.04	0.10	0.06	0.10	0.02	0.09	0.11	0.34	0.14	0.06	0.15
		CV (%)	8.90	5.08	5.02	2.93	24.54	4.74	2.43	16.12	3.60	3.60	1.34	12.15	8.29	9.33	7.16	9.97	10.99	7.40	11.53	11.40	10.68	8.79	11.18
		Min (%)	23.83	7.50	6.60	5.30	3.00	13.90	37.80	1.70	0.85	0.21	4174	0.40	0.43	0.86	0.72	0.83	0.17	1.04	0.78	2.45	1.06	0.62	1.07
		Max (%)	30.52	8.70	7.60	5.70	6.40	15.90	40.50	2.60	0.95	0.24	4340	0.57	0.56	1.15	0.87	1.10	0.23	1.29	1.10	3.35	1.45	0.80	1.46

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

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada)	71	Mean (%)	13.81	1.96	2.17	1.77	58.42	2.72	11.83	1.88	0.31	0.20	3885	0.20	0.29	0.49	0.37	0.38	0.16	0.64	0.46	0.88	0.57	0.30	0.63
		SD	2.19	0.13	0.23	0.16	2.56	0.27	0.59	0.33	0.03	0.02	32.56	0.02	0.04	0.07	0.04	0.05	0.02	0.09	0.08	0.14	0.09	0.04	0.12
		CV (%)	15.85	6.53	10.84	8.81	4.39	9.75	5.02	17.51	9.55	9.55	8.84	12.09	13.56	13.89	10.93	14.06	11.03	14.43	16.73	16.37	15.09	14.19	18.80
		Min (%)	9.88	1.70	1.70	1.50	49.80	2.30	10.70	1.30	0.25	0.16	3823	0.16	0.23	0.39	0.31	0.30	0.13	0.49	0.32	0.63	0.43	0.22	0.41
		Max (%)	19.17	2.30	3.00	2.20	62.90	3.60	13.50	2.70	0.37	0.24	3965	0.25	0.38	0.65	0.49	0.52	0.20	0.89	0.63	1.21	0.78	0.41	0.89
Eastern Canada (ON, QC)	20	Mean (%)	11.59	2.01	2.18	1.83	60.27	2.76	11.95	2.05	0.33	0.22	3851	0.18	0.25	0.43	0.34	0.33	0.14	0.56	0.38	0.73	0.49	0.26	0.50
		SD	1.14	0.12	0.18	0.12	1.41	0.15	0.42	0.30	0.03	0.02	20.82	0.01	0.02	0.03	0.02	0.03	0.01	0.05	0.04	0.07	0.04	0.03	0.06
		CV (%)	9.85	5.94	8.15	6.38	2.34	5.31	3.50	14.50	7.60	7.60	5.54	8.30	7.96	8.05	6.22	7.68	7.93	8.15	10.47	10.00	8.86	9.91	12.31
		Min (%)	9.88	1.80	1.70	1.60	56.90	2.50	10.90	1.50	0.28	0.18	3823	0.16	0.23	0.39	0.31	0.30	0.13	0.49	0.32	0.63	0.43	0.22	0.41
		Max (%)	14.21	2.30	2.40	2.00	62.90	3.10	12.60	2.60	0.37	0.24	3898	0.21	0.30	0.51	0.39	0.39	0.17	0.66	0.47	0.90	0.59	0.31	0.63
Western Canada (AB, MB, SK)	51	Mean (%)	14.73	1.94	2.16	1.75	57.64	2.70	11.78	1.82	0.30	0.19	3899	0.21	0.30	0.52	0.39	0.40	0.17	0.67	0.49	0.94	0.60	0.32	0.68
		SD	1.85	0.13	0.25	0.16	2.60	0.30	0.65	0.32	0.03	0.02	26.20	0.02	0.04	0.06	0.04	0.05	0.01	0.09	0.06	0.12	0.08	0.04	0.10
		CV (%)	12.57	6.53	11.77	9.38	4.52	11.15	5.52	17.57	8.42	8.42	6.67	9.83	11.63	12.00	10.59	12.33	9.05	12.98	13.15	13.06	12.73	11.05	14.08
		Min (%)	11.33	1.70	1.80	1.50	49.80	2.30	10.70	1.30	0.25	0.16	3855	0.17	0.24	0.41	0.32	0.31	0.14	0.53	0.37	0.71	0.48	0.25	0.50
		Max (%)	19.17	2.30	3.00	2.20	62.00	3.60	13.50	2.70	0.36	0.23	3965	0.25	0.38	0.65	0.49	0.52	0.20	0.89	0.63	1.21	0.78	0.41	0.89
Quebec	12	Mean (%)	11.95	2.02	2.23	1.82	60.02	2.78	11.86	1.93	0.33	0.22	3858	0.18	0.26	0.44	0.35	0.34	0.15	0.57	0.39	0.76	0.50	0.27	0.52
		SD	1.17	0.14	0.14	0.13	1.41	0.15	0.40	0.31	0.03	0.02	22.36	0.02	0.02	0.04	0.02	0.03	0.01	0.05	0.04	0.08	0.04	0.03	0.06
		CV (%)	9.82	6.96	6.43	7.36	2.35	5.49	3.34	15.96	8.50	8.50	5.58	8.55	8.32	8.37	6.09	7.60	8.48	7.87	10.63	9.97	8.84	9.71	12.23
		Min (%)	10.89	1.80	2.10	1.60	56.90	2.50	10.90	1.50	0.28	0.18	3831	0.17	0.24	0.40	0.32	0.31	0.14	0.53	0.35	0.69	0.46	0.24	0.46
		Max (%)	14.21	2.30	2.40	2.00	61.80	3.10	12.40	2.30	0.37	0.24	3898	0.21	0.30	0.51	0.39	0.39	0.17	0.66	0.47	0.90	0.59	0.31	0.63
Alberta	9	Mean (%)	14.52	1.95	2.29	1.76	57.05	2.87	12.17	1.93	0.30	0.19	3897	0.20	0.29	0.50	0.38	0.39	0.16	0.64	0.46	0.92	0.59	0.30	0.66
		SD	2.55	0.10	0.31	0.17	3.96	0.35	0.80	0.42	0.02	0.02	37.17	0.02	0.04	0.08	0.04	0.06	0.02	0.10	0.07	0.16	0.10	0.03	0.12
		CV (%)	17.58	5.30	13.59	9.58	6.95	12.17	6.59	21.78	8.27	8.27	9.95	10.06	14.76	15.50	11.85	14.57	11.41	15.73	15.63	17.49	16.64	11.32	18.75
		Min (%)	12.28	1.80	2.00	1.50	49.80	2.60	11.50	1.40	0.27	0.17	3858	0.18	0.26	0.44	0.34	0.34	0.14	0.56	0.40	0.78	0.51	0.27	0.55
		Max (%)	19.17	2.10	3.00	2.10	60.40	3.60	13.40	2.70	0.34	0.22	3965	0.24	0.37	0.65	0.46	0.49	0.20	0.83	0.62	1.21	0.76	0.37	0.89
Saskatchewan	31	Mean (%)	14.87	1.91	2.11	1.72	57.88	2.59	11.63	1.83	0.29	0.19	3900	0.22	0.31	0.52	0.39	0.41	0.17	0.69	0.50	0.96	0.61	0.32	0.69
		SD	1.72	0.12	0.23	0.16	2.20	0.23	0.58	0.27	0.02	0.01	24.03	0.02	0.03	0.06	0.04	0.05	0.01	0.09	0.06	0.12	0.07	0.04	0.09
		CV (%)	11.56	6.15	10.67	9.53	3.80	8.72	5.00	14.71	7.82	7.82	6.62	9.76	11.29	11.56	10.82	12.24	8.50	12.76	12.90	12.30	12.17	11.08	13.28
		Min (%)	11.33	1.70	1.80	1.50	51.30	2.30	10.70	1.30	0.25	0.16	3855	0.17	0.24	0.41	0.32	0.31	0.14	0.53	0.37	0.71	0.48	0.25	0.50
		Max (%)	18.73	2.30	2.70	2.20	62.00	3.20	13.50	2.30	0.34	0.22	3961	0.25	0.38	0.65	0.49	0.52	0.20	0.89	0.63	1.17	0.78	0.41	0.86

Dry matter of wheat is standardized at 88%.

Digestibility Coefficients ¹ (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	89	88	88	83	85	84	92	89	89	87	90	90
Poultry	91	89	90	85	86	85	86	94	90	90	90	91

¹ AMINODat® 6.3

Wheat Middlings



Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada & USA)	24	Mean (%)	17.10	3.84	7.73	4.95	25.20	10.08	34.98	4.50	0.92	0.74	3899	0.24	0.33	0.58	0.67	0.54	0.25	1.18	0.52	1.02	0.76	0.45	0.66
		SD	0.76	0.35	0.67	0.42	4.36	1.22	3.52	0.61	0.13	0.10	23.52	0.01	0.01	0.02	0.03	0.02	0.01	0.05	0.03	0.05	0.03	0.02	0.03
		CV (%)	4.45	9.18	8.71	8.52	17.31	12.10	10.06	13.63	13.88	13.88	0.60	4.88	3.26	3.60	4.95	3.69	5.18	4.47	5.59	5.04	4.13	3.42	5.18
		Min (%)	15.72	3.20	6.20	4.10	18.70	7.00	25.70	3.40	0.65	0.52	3871	0.22	0.31	0.54	0.58	0.50	0.22	1.07	0.46	0.93	0.70	0.42	0.60
		Max (%)	19.11	4.90	8.50	5.50	35.20	11.80	39.80	5.40	1.12	0.89	3976	0.28	0.35	0.63	0.72	0.57	0.27	1.25	0.60	1.16	0.83	0.47	0.72

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	73	70	72	63	60	74	82	68	71	65	79	64
Poultry	83	77	80	79	75	81	82	82	79	77	78	75

¹ AMINODat® 6.3



Barley

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada)	45	Mean (%)	11.13	2.31	5.04	2.40	51.60	5.49	18.08	1.12	0.34	0.19	3838	0.18	0.24	0.41	0.41	0.37	0.14	0.54	0.38	0.74	0.54	0.23	0.54
		SD	0.91	0.14	0.43	0.29	1.63	0.51	1.10	0.58	0.02	0.01	22.10	0.01	0.02	0.03	0.03	0.03	0.01	0.04	0.03	0.06	0.04	0.02	0.05
		CV (%)	8.18	5.84	8.59	11.89	3.15	9.33	6.10	52.30	6.89	6.89	0.58	7.74	6.66	6.86	6.24	6.91	7.18	7.85	8.57	8.16	7.31	7.97	10.08
		Min (%)	9.40	2.20	3.40	1.50	48.60	4.30	14.50	0.30	0.29	0.16	3795	0.16	0.20	0.37	0.36	0.32	0.12	0.46	0.32	0.63	0.47	0.20	0.44
		Max (%)	13.04	2.60	5.90	3.00	57.80	6.70	20.20	3.10	0.41	0.22	3891	0.21	0.27	0.47	0.46	0.42	0.16	0.62	0.46	0.87	0.63	0.27	0.66
Western Canada (AB, MB, SK)	44	Mean (%)	11.15	2.31	5.03	2.40	51.63	5.46	18.03	1.13	0.34	0.19	3838	0.18	0.24	0.42	0.41	0.37	0.14	0.54	0.38	0.75	0.55	0.23	0.54
		SD	0.91	0.14	0.42	0.29	1.64	0.48	1.07	0.58	0.02	0.01	22.10	0.01	0.02	0.03	0.03	0.03	0.01	0.04	0.03	0.06	0.04	0.02	0.05
		CV (%)	8.18	5.84	8.41	11.91	3.17	8.85	5.91	51.88	6.41	6.40	0.58	7.69	6.52	6.78	6.25	6.89	7.12	7.85	8.51	8.12	7.26	7.91	10.02
		Min (%)	9.40	2.20	3.40	1.50	48.60	4.30	14.50	0.30	0.29	0.16	3795	0.16	0.20	0.37	0.36	0.32	0.12	0.46	0.32	0.63	0.47	0.20	0.44
		Max (%)	13.04	2.60	5.90	3.00	57.80	6.70	20.20	3.10	0.39	0.21	3891	0.21	0.27	0.47	0.46	0.42	0.16	0.62	0.46	0.87	0.63	0.27	0.66
Alberta	11	Mean (%)	11.42	2.44	4.79	2.38	51.48	5.33	17.48	1.51	0.34	0.19	3851	0.18	0.24	0.43	0.42	0.38	0.15	0.55	0.40	0.77	0.56	0.24	0.56
		SD	0.80	0.15	0.55	0.38	2.51	0.42	1.18	0.80	0.02	0.01	22.00	0.01	0.01	0.02	0.02	0.02	0.01	0.04	0.03	0.05	0.03	0.02	0.05
		CV (%)	7.04	6.19	11.41	15.80	4.88	7.83	6.78	52.72	5.42	5.41	0.57	6.34	5.14	5.39	4.96	5.38	5.58	6.48	7.13	6.45	5.74	6.38	8.60
		Min (%)	10.50	2.20	3.40	1.50	48.60	4.30	14.50	0.70	0.30	0.16	3830	0.17	0.23	0.40	0.39	0.35	0.14	0.51	0.36	0.71	0.52	0.22	0.50
		Max (%)	13.04	2.60	5.30	2.90	57.80	5.80	18.70	3.10	0.36	0.20	3891	0.21	0.27	0.47	0.45	0.42	0.16	0.61	0.46	0.87	0.63	0.27	0.66
Manitoba	5	Mean (%)	10.32	2.23	4.84	2.58	51.38	5.38	18.10	1.52	0.34	0.19	3806	0.17	0.22	0.39	0.39	0.34	0.13	0.51	0.36	0.69	0.51	0.22	0.49
		SD	0.45	0.06	0.41	0.18	1.18	0.55	1.15	0.13	0.02	0.01	12.66	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.02	0.01	0.03
		CV (%)	4.40	2.59	8.47	6.93	2.30	10.30	6.36	8.58	5.99	5.98	0.33	4.00	4.40	3.67	1.98	3.90	4.09	3.15	4.54	4.81	3.93	4.14	6.26
		Min (%)	9.68	2.20	4.30	2.40	50.10	4.80	16.90	1.40	0.31	0.17	3795	0.16	0.20	0.37	0.38	0.32	0.12	0.49	0.33	0.64	0.48	0.20	0.45
		Max (%)	10.79	2.30	5.30	2.80	52.50	6.00	19.30	1.70	0.36	0.20	3820	0.17	0.23	0.40	0.40	0.35	0.14	0.53	0.37	0.73	0.53	0.23	0.52
Saskatchewan	28	Mean (%)	11.19	2.25	5.15	2.37	51.73	5.53	18.23	0.91	0.34	0.19	3838	0.18	0.24	0.42	0.41	0.37	0.14	0.54	0.38	0.75	0.55	0.23	0.55
		SD	0.95	0.07	0.32	0.26	1.30	0.50	0.96	0.41	0.02	0.01	15.26	0.01	0.02	0.03	0.03	0.03	0.01	0.05	0.03	0.06	0.04	0.02	0.06
		CV (%)	8.47	3.05	6.24	10.79	2.52	9.02	5.29	45.39	6.97	6.97	0.40	8.00	6.43	6.92	6.79	7.15	7.46	8.49	8.87	8.59	7.63	8.39	10.15
		Min (%)	9.40	2.20	4.50	2.00	49.00	4.70	16.60	0.30	0.29	0.16	3812	0.16	0.21	0.37	0.36	0.32	0.12	0.46	0.32	0.63	0.47	0.20	0.44
		Max (%)	12.91	2.40	5.90	3.00	54.20	6.70	20.20	1.90	0.39	0.21	3870	0.20	0.27	0.47	0.46	0.42	0.16	0.62	0.44	0.86	0.62	0.27	0.65

Dry matter of barley is standardized at 88%.

	Digestibility Coefficients ¹ (%)											
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	82	82	82	76	79	79	86	81	82	79	84	83
Poultry	90	81	82	83	76	80	79	85	83	82	81	81

¹ AMINODat® 6.3

Canola Meal

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	ADF	NDF	Sugar	Phosphorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada & USA)	19	Mean (%)	37.53	4.25	11.17	6.87	16.69	25.64	7.61	1.01	0.61	4146	0.73	0.88	1.61	2.01	1.59	0.52	2.31	1.49	2.61	1.92	0.98	1.50
		SD	0.96	1.07	0.36	0.40	0.92	1.41	0.30	0.04	0.03	54.07	0.02	0.04	0.06	0.09	0.04	0.02	0.08	0.04	0.08	0.05	0.03	0.04
		CV (%)	2.55	25.06	3.25	5.85	5.51	5.49	3.91	4.27	4.27	1.30	3.32	4.00	3.61	4.56	2.49	3.16	3.26	2.74	3.21	2.66	3.38	2.83
		Min (%)	34.57	3.20	10.60	6.20	14.80	23.00	7.00	0.92	0.55	4084	0.66	0.79	1.46	1.78	1.47	0.47	2.09	1.37	2.37	1.78	0.88	1.38
		Max (%)	39.01	7.90	11.80	7.60	18.10	28.50	8.10	1.09	0.65	4326	0.77	0.94	1.70	2.14	1.66	0.54	2.46	1.56	2.73	2.01	1.04	1.57
Eastern Canada (ON, QC)	6	Mean (%)	37.22	4.80	11.08	6.67	16.70	25.87	7.72	1.01	0.61	4180	0.73	0.88	1.61	2.00	1.58	0.51	2.29	1.48	2.60	1.91	0.98	1.49
		SD	1.45	1.70	0.38	0.20	0.91	0.78	0.27	0.03	0.02	83.61	0.04	0.05	0.08	0.12	0.06	0.02	0.11	0.06	0.12	0.07	0.05	0.06
		CV (%)	3.89	35.45	3.44	2.95	5.46	3.03	3.52	3.09	3.09	2.00	5.07	5.18	4.95	6.06	3.63	4.64	4.69	3.98	4.79	3.78	5.15	4.01
		Min (%)	34.57	3.70	10.60	6.40	15.30	24.60	7.30	0.97	0.58	4117	0.66	0.79	1.46	1.78	1.47	0.47	2.09	1.37	2.37	1.78	0.88	1.38
		Max (%)	39.01	7.90	11.60	6.90	18.10	26.80	8.00	1.05	0.63	4326	0.77	0.93	1.69	2.14	1.65	0.54	2.41	1.55	2.73	2.00	1.04	1.57
USA (MB, SK)	12	Mean (%)	37.70	3.97	11.19	6.98	16.58	25.29	7.57	1.01	0.61	4128	0.74	0.88	1.62	2.02	1.60	0.52	2.32	1.50	2.61	1.93	0.99	1.50
		SD	0.68	0.54	0.37	0.46	0.91	1.45	0.32	0.05	0.03	24.30	0.02	0.03	0.05	0.08	0.03	0.01	0.06	0.03	0.07	0.04	0.02	0.04
		CV (%)	1.81	13.53	3.29	6.59	5.51	5.74	4.23	4.84	4.84	0.59	2.41	3.67	3.17	3.85	1.95	2.40	2.61	2.10	2.52	2.20	2.50	2.36
		Min (%)	36.76	3.20	10.70	6.20	14.80	23.00	7.00	0.92	0.55	4084	0.71	0.83	1.55	1.86	1.55	0.50	2.25	1.46	2.53	1.87	0.95	1.46
		Max (%)	38.83	4.50	11.80	7.60	18.00	28.50	8.10	1.09	0.65	4167	0.77	0.94	1.70	2.13	1.66	0.54	2.46	1.56	2.73	2.01	1.03	1.57

Dry matter of canola meal is standardized at 88%.

Digestibility Coefficients ¹ (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	83	73	75	74	73	78	85	77	79	74	82	79
Poultry	85	76	80	80	73	82	87	79	82	79	83	82

¹ AMINODat® 6.3



Field Peas

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	NDF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada)	7	Mean (%)	22.44	1.62	5.40	3.20	41.92	6.76	11.80	4.00	0.36	0.16	3933	0.20	0.30	0.51	1.59	0.81	0.21	2.02	0.90	1.58	1.03	0.53	1.05
		SD	0.17	0.04	0.12	0.00	0.13	0.13	0.14	0.07	0.01	0.01	4.67	0.00	0.00	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
		CV (%)	0.77	2.76	2.27	0.00	0.31	1.98	1.20	1.77	3.69	3.71	0.12	1.09	1.27	1.21	1.06	0.59	0.64	0.70	1.11	0.49	0.67	1.46	0.78
		Min (%)	22.31	1.60	5.20	3.20	41.80	6.60	11.70	3.90	0.34	0.15	3928	0.20	0.30	0.50	1.57	0.80	0.20	2.01	0.89	1.57	1.02	0.52	1.04
		Max (%)	22.71	1.70	5.50	3.20	42.10	6.90	12.00	4.10	0.37	0.17	3940	0.21	0.31	0.52	1.61	0.82	0.21	2.05	0.92	1.59	1.04	0.54	1.06

Dry matter of field peas is standardized at 88%.

Digestibility Coefficients ¹ (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	77	71	73	84	78	70	90	81	80	78	82	80
Poultry	78	71	74	87	80	75	89	81	80	78	84	81

¹ AMINODat® 6.3

Faba Beans

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Crude Fiber	Ash	Starch	ADF	Sugar	Phos-phorus	Phytate P	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada)	7	Mean (%)	27.35	0.80	9.33	3.27	36.27	10.53	2.23	0.42	0.25	3959	0.19	0.33	0.54	1.67	0.93	0.24	2.36	1.09	1.90	1.22	0.68	1.14
		SD	0.07	0.17	0.15	0.06	0.06	0.06	0.06	0.00	0.00	6.66	0.00	0.00	0.00	0.03	0.01	0.00	0.10	0.01	0.03	0.02	0.01	0.02
		CV (%)	0.24	21.65	1.64	1.77	0.16	0.55	2.59	0.49	0.51	0.17	1.83	1.23	0.79	1.52	1.53	1.73	4.09	1.34	1.62	1.68	1.69	1.55
		Min (%)	27.28	0.60	9.20	3.20	36.20	10.50	2.20	0.42	0.25	3952	0.18	0.33	0.53	1.65	0.92	0.24	2.22	1.08	1.88	1.21	0.67	1.11
		Max (%)	27.41	0.90	9.50	3.30	36.30	10.60	2.30	0.42	0.25	3965	0.19	0.34	0.54	1.72	0.96	0.25	2.48	1.12	1.97	1.26	0.71	1.16

Dry matter of faba beans is standardized at 88%.

Digestibility Coefficients ¹ (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	69	60	62	83	76	68	88	81	80	77	81	78
Poultry	70	57	62	82	74	65	84	74	75	74	76	76

¹ AMINODat® 6.3

Meat and Bone Meal (MBM)

AMINONIR®

Region	n	STAT	Crude Protein	Crude Fat	Ash	Phos-phorus	Gross Energy	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
All Regions (Canada)	45	Mean (%)	52.68	12.26	19.14	2.25	4404	0.86	0.50	1.38	2.84	1.90	0.44	3.52	1.83	3.47	2.33	1.12	1.92
		SD	1.98	1.37	0.40	0.10	65.57	0.04	0.03	0.05	0.11	0.06	0.01	0.22	0.05	0.07	0.06	0.04	0.05
		CV (%)	3.75	11.15	2.11	4.67	1.49	4.26	5.34	3.86	4.01	2.93	3.15	6.11	3.00	1.97	2.55	3.74	2.47
		Min (%)	49.37	11.20	18.50	2.14	4354	0.80	0.48	1.31	2.67	1.82	0.43	3.17	1.75	3.37	2.24	1.06	1.84
		Max (%)	54.14	14.60	19.50	2.40	4514	0.90	0.55	1.43	2.98	1.97	0.46	3.70	1.89	3.54	2.39	1.16	1.96

Dry matter of meat and bone meal is standardized at 88 %.

Digestibility Coefficients ¹ (%)												
	MET	CYS	M+C	LYS	THR	TRP	ARG	ILE	LEU	VAL	HIS	PHE
Swine	83	69	84	79	81	78	87	83	83	83	80	84
Poultry	71	30	57	69	63	56	75	69	71	70	70	71

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 (%)	29.2	6.05	20.73	22.3	41.3
		Reactive Lysine (%)	0.68	0.09	13.74	0.50	0.81
		Reactive Lysine/Total Lysine Ratio (%)	73.3	5.71	7.80	62.8	80.2
Soybean Meal	34	Protein Solubility in KOH (%)	77.1	4.26	5.53	66.2	86.9
		Trypsin Inhibitor Activity (mg/g)	2.04	0.77	37.63	0.30	3.90
		Reactive Lysine (%)	2.49	0.10	3.97	2.17	2.65
		Reactive Lysine/Total Lysine Ratio (%)	90.3	1.77	1.96	86.0	92.6

AMINO ACIDS

Name	DM %	CP %	Lys %	Met %	Cys %	Met+Cys %	Thr %	Trp %	Arg %	Ile %	Leu %	Val %	His %	Phe %
Wheat Global, 2020-2022	88.00	12.48	0.33	0.19	0.27	0.46	0.34	0.15	0.58	0.42	0.80	0.52	0.28	0.58
Wheat Global, 2021-2023	88.00	11.88	0.33	0.18	0.25	0.43	0.33	0.15	0.55	0.40	0.76	0.50	0.26	0.53
Wheat Global, 2023-2024	88.00	11.23	0.32	0.17	0.24	0.41	0.32	0.15	0.53	0.37	0.72	0.47	0.25	0.50
Wheat Australia, 2023-2023	88.00	10.98	0.31	0.17	0.24	0.41	0.31	0.14	0.52	0.36	0.71	0.46	0.25	0.50
Wheat Brazil, 2023-2023	88.00	11.60	0.32	0.18	0.25	0.43	0.33	0.15	0.55	0.40	0.76	0.50	0.26	0.53
Wheat Bulgaria, 2023-2023	88.00	11.60	0.32	0.18	0.25	0.43	0.33	0.15	0.55	0.40	0.76	0.50	0.26	0.53
Wheat Egypt, 2023-2023	88.00	11.60	0.32	0.18	0.25	0.43	0.33	0.15	0.55	0.40	0.76	0.50	0.26	0.53
Wheat France, 2023-2023	88.00	11.60	0.32	0.18	0.25	0.43	0.33	0.15	0.55	0.40	0.76	0.50	0.26	0.53

NEW! AMINODat® 6.3 Update

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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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