HIGH-OLEIC SOYBEANS AVERAGE NUTRIENT COMPOSITION

Made possible through collaboration and data sharing from Cumberland Valley Analytical Services, Dairyland Laboratories and Rock River Laboratory

100% Dry Matter Basis

		High-Oleic Raw Soybeans		High-Oleic Roasted Soybeans		High-Oleic Expeller Soybean Meal	
	Unit	Mean	Sample Number*	Mean	Sample Number*	Mean	Sample Number*
Dry Matter	%	91.74	116	94.31	983	88.49	21
Moisture	%	8.26	116	5.66	988	11.51	21
Protein							
Crude Protein	% of DM	39.95	147	39.42	1,418	46.68	27
RUP†	% of CP	33.74	32	60.70	716	63.76	18
RDP	% of CP	66.26	32	39.30	716	36.24	18
Soluble Protein	% of DM	59.26	73	6.18	169	6.33	4
ADIP	% of DM	0.60	101	0.68	680	0.45	3
NDIP	% of DM	1.31	72	2.27	671	3.12	9
Amino Acids††							
Arginine	% of CP	7.51	8	7.04	11	6.73	11
Histidine	% of CP	2.69	8	2.42	11	2.61	11
Isoleucine	% of CP	4.55	9	4.40	15	4.45	11
Leucine	% of CP	7.81	9	7.37	15	7.62	11
Lysine	% of CP	6.72	9	6.29	15	5.61	11
Methionine	% of CP	1.68	9	1.27	15	1.29	303
Phenylalanine	% of CP	5.26	8	4.89	11	4.94	11
Threonine	% of CP	4.06	9	3.80	15	3.95	11
Tryptophan	% of CP	1.59	8	1.42	10	1.39	21
Valine	% of CP	4.53	9	4.71	15	4.73	11
Carbohydrates							
aNDF	% of DM	11.90	39	14.56	740	14.50	10
aNDFom	% of DM	11.09	257	13.22	611	13.84	6
ADF	% of DM	6.95	102	8.14	751	7.70	13
Lignin	% of DM	1.67	102	1.78	672	1.86	9
NFC	% of DM		0	23.10	200	27.14	4
Sugar	% of DM	4.77	72	11.55	53	9.03	3
Starch	% of DM	0.65	2	0.44	125	1.31	3
Fat							
Ether Extract	% of DM	21.62	135	20.98	986	8.19	32
% TFA	% of DM	20.68	123	17.26	873	6.93	14
C 16:0	% TFA	5.88	51	7.32	828	6.76	14
C 18:0	% TFA	3.69	51	3.60	828	3.81	14
C 18:1	% TFA	73.98	122	72.97	828	72.58	14
C 18:2	% TFA	16.36	51	19.31	828	10.90	14
C 18:3	% TFA	2.99	50	2.68	828	2.53	14
Minerals							
Calcium	% of DM	0.28	103	0.23	754	0.31	13
Phosphorus	% of DM	0.61	103	0.56	754	0.61	13
Magnesium	% of DM	0.25	103	0.22	754	0.25	13
Potassium	% of DM	1.95	103	1.80	754	1.96	13
Sodium	% of DM	0.00	9	0.01	178	0.01	7
Chloride	% of DM	0.29	31	0.04	47	0.02	3
Sulfur	% of DM	0.32	73	0.33	639	0.38	9
Copper	ppm	10.01	8	16.47	174	19.12	7
Iron	ppm	85.99	8	152.23	174	139.17	7
Manganese	ppm	20.58	8	29.73	174	39.30	7
Zinc	ppm	28.10	8	45.89	174	55.68	7
Ash	% of DM	5.33	110	5.49	836	5.54	13

*Number of samples contributing to the mean. Sample values contain wet-chemistry and NIR results. Amino acid analyses were not requested for these samples received by the labs. Samples containing 70% oleic acid or higher were considered high-oleic soybeans.
†16 Hour RUP determined by in situ/in vitro method.
††High-oleic raw soybean amino acid values have been carried over from conventional raw soybean values due to insufficient high-oleic samples and expected nutritional similarities. Methionine and Tryptophan values for high-oleic expeller soybean meal were carried over from conventional expeller soybean meal due to insufficient data and expected nutritional similarities.

Find more resources at can.ussoy.org/dairy

SAMPLE YOUR FEED INGREDIENT

U.S. Soy recommends testing on-farm samples for accurate dietary formulation. The nutrient composition values in this document are averages from lab data using varying methods. The average nutrient composition values are intended to be a reference and are not meant to replace laboratory testing of on-farm samples.

CONVENTIONAL SOYBEANS AVERAGE NUTRIENT COMPOSITION

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100% Dry Matter Basis

		Conventional Raw Soybeans		Conventional Roasted Soybeans		Conventional Expeller Soybean Meal	
	Unit	Mean	Sample Number*	Mean	Sample Number*	Mean	Sample Number*
Dry Matter	%	92.67	1,223	93.13	1,583	91.23	2,926
Moisture	%	7.36	1,217	6.85	1,597	8.19	2,933
Protein							
Crude Protein	% of DM	38.87	843	40.75	2,254	46.98	2,753
RUP†	% of CP	32.48	263	60.12	1,121	63.94	141
RDP	% of CP	67.52	262	39.87	1,121	35.72	132
Soluble Protein	% of DM	45.05	74	7.24	526	6.80	348
ADIP	% of DM	0.72	327	0.62	1,323	0.93	1,952
NDIP	% of DM	1.24	312	2.64	1,308	2.80	2,030
Amino Acids							
Arginine	% of CP	7.51	8	6.54	24	6.83	52
Histidine	% of CP	2.69	8	2.28	24	2.81	154
Isoleucine	% of CP	4.55	9	4.46	25	4.43	303
Leucine	% of CP	7.81	9	7.60	25	7.96	303
Lysine	% of CP	6.72	9	5.40	28	5.95	307
Methionine	% of CP	1.68	9	1.20	26	1.29	303
Phenylalanine	% of CP	5.26	8	4.86	24	4.87	52
Threonine	% of CP	4.06	9	3.68	25	3.7	201
Tryptophan	% of CP	1.59	8	1.38	25	1.39	21
Valine	% of CP	4.53	9	4.66	24	4.67	201
Carbohydrates							
aNDF	% of DM	11.16	397	14.87	1,400	17.21	2,252
aNDFom	% of DM	11.34	332	12.41	859	16.13	1,883
ADF	% of DM	7.97	330	8.49	1,435	8.65	2,240
Lignin	% of DM	1.56	323	2.25	1,304	2.59	1,998
NFC	% of DM		0	23.55	688	27.35	558
Sugar	% of DM	12.33	70	10.11	172	14.37	251
Starch	% of DM	1.85	43	1.10	189	0.82	107
Fat							
Ether Extract	% of DM	20.84	659	18.76	1,550	8.14	996
% TFA	% of DM	19.15	280	16.39	398	6.96	3
C 16:0	% TFA	9.00	196	9.29	398	12.03	13
C 18:0	% TFA	4.24	196	3.68	398	3.99	13
C 18:1	% TFA	24.98	258	30.13	398	19.22	13
C 18:2	% TFA	43.17	196	40.06	398	53.85	13
C 18:3	% TFA	6.68	194	6.08	398	8.07	12
Minerals							
Calcium	% of DM	0.26	542	0.26	1,449	0.32	2,207
Phosphorus	% of DM	0.61	542	0.59	1,448	0.66	2,207
Magnesium	% of DM	0.25	541	0.24	1,441	0.28	2,093
Potassium	% of DM	1.89	541	1.89	1,442	2.03	2,093
Sodium	% of DM	0.00	259	0.02	644	0.02	462
Chloride	% of DM	0.07	79	0.04	411	0.06	180
Sulfur	% of DM	0.31	541	0.32	1,240	0.36	1,960
Copper	ppm	11.29	260	16.92	644	18.92	433
Iron	ppm	81.79	260	149.89	644	291.82	433
Manganese	ppm	24.14	260	32.17	644	41.8	433
Zinc	ppm	37.05	260	47.78	644	55.17	433
Ash	% of DM	5.40	428	5.68	1,434	6.49	2,402

*Number of samples contributing to the mean. Sample values contain wet-chemistry and NIR results. Amino acid analyses were not requested for these samples received by the labs.
†16 Hour RUP determined by in situ/in vitro method.

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