

Nutritional Qualities of Grains
Comparison Chart

Per 100 g	Einkorn Wheat	Emmer Wheat	Kamut Wheat	Spelt	Triticale	Rye	Oats	Barley (pearled)	Wheat (hard white)	Wheat (soft white)	Wheat (hard red winter)	Wheat (hard red spring)	Wheat (soft red winter)	Wheat Durum	Rice (brown, long-grain)	Corn (maize, yellow)	Corn (maize, white)	Sor-ghum	Millet
Proximates																			
Water (g)	no data	no data	10.95	11.02	10.51	10.6	8.22	10.09	9.57	10.42	13.1	12.76	12.17	10.94	10.37	10.37	10.37	9.2	8.67
Energy (kJ)	1450	no data	1411	1414	1406	1414	1628	1473	1431	1423	1368	1377	1385	1418	1548	1527	1527	1418	1582
Protein (g)	18.2	no data	14.7	14.57	13.05	10.34	16.89	9.91	11.31	10.69	12.61	15.4	10.35	13.68	7.94	9.42	9.42	11.3	11.02
Fat (g)	2.48	no data	2.2	2.43	2.09	1.63	6.9	1.16	1.71	1.99	1.54	1.92	1.56	2.47	2.92	4.74	4.74	3.3	4.22
Carbohydrate (g)	no data	no data	70.38	70.19	72.13	75.86	66.27	77.72	75.9	75.36	71.18	68.03	74.24	71.13	77.24	74	74.26	74.63	72.85
Fiber (g)	8.7	no data	9.1	10.7	no data	15.1	10.6	15.6	12.2	12.7	12.2	12.2	12.5	no data	3.5	no data	no data	6.3	8.5
Sugars (g)	2.67	no data	8.19	6.82	no data	0.98	no data	0.8	0.41	0.41	0.41	0.41	0.41	no data	0.85	0.64	0.64	no data	no data
Starch (g)	65.5	no data	52.41	53.92	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Vitamins																			
Thiamin (mg)	0.5	no data	0.591	0.364	0.416	0.316	0.763	0.191	0.387	0.41	0.383	0.504	0.394	0.419	0.401	0.385	0.385	0.237	0.421
Riboflavin (mg)	0.45	no data	0.178	0.113	0.134	0.251	0.139	0.114	0.108	0.107	0.115	0.11	0.096	0.121	0.093	0.201	0.201	0.142	0.29
Niacin (mg)	3.1	no data	6.35	6.843	1.43	4.27	0.961	4.604	4.381	4.766	5.464	5.71	4.8	6.738	5.091	3.627	3.627	2.927	4.72
Pantothenic acid (mg)	no data	no data	0.905	1.068	1.323	1.456	1.349	0.282	0.954	0.85	0.954	0.935	0.85	0.935	1.493	0.424	0.424	no data	0.848
Vitamin B-6 (mg)	0.49	no data	0.255	0.23	0.138	0.294	0.119	0.26	0.368	0.378	0.3	0.336	0.272	0.419	0.509	0.622	0.622	no data	0.384
Choline (mg)	no data	no data	25.8	no data	no data	30.4	no data	37.8	no data	no data	31.2	31.2	no data	no data	30.7	no data	no data	no data	no data
Betaine (mg)	no data	no data	113	no data	no data	146.1	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Folate (mg)	no data	no data	no data	45	73	38	56	23	38	41	38	43	41	43	20	19	no data	no data	85
Vitamin E (mg)	no data	no data	0.6	0.79	0.9	0.85	0.7	0.02	1.01	1.01	1.01	1.01	1.01	no data	1.2	0.49	no data	no data	0.05
Carotene, beta (µg)	19	no data	5	5	no data	7	no data	13	5	5	5	5	0	no data	0	97	no data	no data	no data
Carotene, alpha (µg)	53	no data	2	0	no data	0	no data	0	0	0	0	0	0	no data	0	63	no data	no data	no data
Vitamin A (IU)	312	no data	10	10	0	11	0	22	9	9	9	9	0	0	0	214	0	0	0
Lutein + zeaxanthin (µg)	769	no data	301	169	no data	210	no data	160	220	220	220	220	0	no data	0	1355	no data	no data	no data
Tocopherol, beta (mg)	no data	no data	0.15	0.25	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	0	no data	no data	no data	no data
Tocopherol, gamma (mg)	no data	no data	1.15	1.71	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	0	no data	no data	no data	no data
Tocopherol, delta (mg)	no data	no data	0.01	0	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	0	no data	no data	no data	no data
Vitamin K (phylloquinone)	no data	no data	1.8	3.6	no data	5.9	no data	2.2	1.9	1.9	1.9	1.9	no data	no data	1.9	0.3	no data	no data	0.9
Minerals																			
Calcium (mg)	no data	no data	24	27	37	24	54	29	32	34	29	25	27	34	23	7	7	28	8
Iron (mg)	4.59	3.41	4.41	4.44	2.57	2.63	4.72	2.5	4.56	5.4	3.19	3.6	3.21	3.52	1.47	2.71	2.71	4.4	3.01
Magnesium (mg)	no data	no data	134	136	130	110	177	79	93	90	126	124	126	144	143	127	127	no data	114
Phosphorus (mg)	415	no data	386	401	358	332	523	221	355	402	288	332	493	508	333	210	210	287	285
Potassium (mg)	390	no data	446	388	332	510	429	280	432	435	363	340	397	431	223	287	287	350	195
Sodium (mg)	no data	no data	6	8	5	2	2	9	2	2	2	2	2	2	7	35	35	6	5
Zinc (mg)	2.24	2.28	3.68	3.28	3.45	2.65	3.97	2.1	3.33	3.5	2.65	2.78	2.63	4.16	2.02	2.21	2.21	no data	1.68
Copper (mg)	no data	no data	0.522	0.511	0.457	0.367	0.626	0.4	0.363	0.4	0.434	0.41	0.45	0.553	0.277	0.314	0.314	no data	0.75
Manganese (mg)	4.4	no data	2.86	2.983	3.2	2.577	4.916	1.3	3.821	3.4	3.985	4.055	4.391	3.3012	3.743	0.485	0.485	no data	1.632
Selenium (mg)	27.89	22.92	69.3	11.7	no data	13.9	no data	38	no data	no data	70.7	70.7	no data	89.4	23.4	15.5	15.5	no data	2.7
Essential Fatty-Acids																			
PALMITIC ACID (C 16:0) (gm)			21.57																
OLEIC ACID (C 18:1) (gm)			17.14																
LINOLEIC ACID (C 18:2) (gm)			54.26																
LINOLENIC ACID (C 18:3) (gm)			3.53																
Sources:																			
USDA National Nutrient Database for Standard Reference, Release 22. http://www.ars.usda.gov/main/site_main.htm?modecode=12-35-45-00																			
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