ALMOND COMPOSITION

The U.S. Department of Agriculture (USDA) has been responsible for analyzing the nutrient content of the nation's food supply for over 120 years. The first U.S. food composition tables were published in 1891 by W.O. Atwater and C.D. Woods, who compiled the water, fat, protein, ash and carbohydrate contents of approximately 200 different foods.

Today, the USDA National Nutrient Database for Standard Reference (SR) contains data for about 8,790 foods and up to 150 food components. It is the major source of food composition data in the U.S. and provides the foundation for most public and private sector food composition databases. The SR also is recognized globally as a resource for food composition data.

Since 1992, updated data have been published electronically on the USDA Nutrient Data Laboratory (NDL) website. An updated version of the database is now released annually. The current release (SR28) was issued in September 2015 and can be accessed at http://ndb.nal.usda.gov.

Nutrient data for specific foods or products can be submitted to the USDA by the food industry, government agencies and other sources.

ALMOND COMPOSITION DATA IN THE SR DATABASE

Almond Board of California (ABC) is committed to submitting high-quality nutrient data for California Almonds to USDA for consideration. Since 1999, almond composition data in the USDA SR have been regularly updated based on nutrient data submissions from ABC.

Analysis of almond samples is contracted out by ABC to independent testing laboratories in the U.S. that are accredited according to ISO/IEC 17025 standards of the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) for the majority of analyses carried out. Each sample is analyzed for a comprehensive range of macronutrients, micronutrients and, in some cases, major phytosterols.

When ABC submits almond nutrient data sets, USDA also requests the following specific information:

- Analytical information (test date, laboratory name/location, analytical methods used)
- Sampling strategy (sample origin, number of samples tested)
- Marketing data (product identification)
- Production statistics (variety specific, as a percentage of total annual crop)

Electronic data are preferred, and submitted data are checked for accuracy against hard copy laboratory reports. Once the data are verified, a proprietary algorithm is used to achieve a "market basket" nutrient set. This market-basket approach adjusts for sampling, differences among varieties, percentage of each variety produced and other factors to best represent the overall nutrient profile of the item that is purchased by consumers across the U.S. throughout the year.

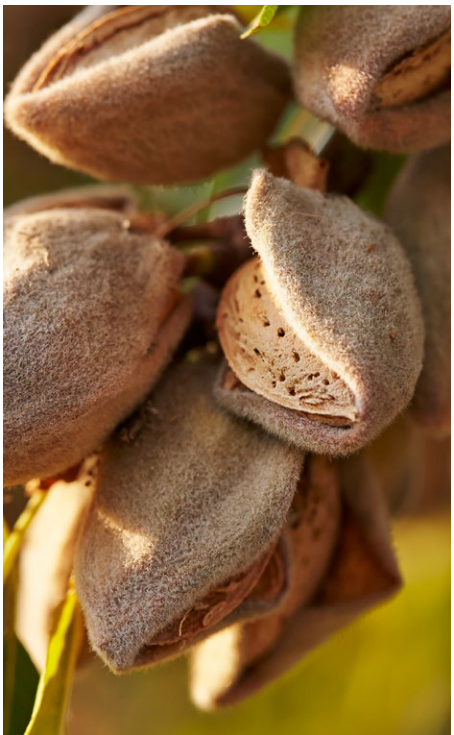
HISTORY OF ABC CONTRIBUTIONS TO USDA SR DATABASE

1999: ABC collaborated with the International Tree Nut Council in 1998 to analyze the major California Almond varieties obtained from all of the commercial growing regions of California's Central Valley. Nutrient data for whole kernels and forms were submitted to USDA and the SR was updated in 1999.

2007 (SR20): ABC submitted 84 comprehensive nutrient data sets for natural (with skin) almonds of nine major California varieties.

2010 (SR23): ABC submitted 16 nutrient data sets for blanched (whole, sliced and slivered) and dry-roasted almonds.

2013: ABC submitted 14 nutrient data sets for natural (with skin) almond kernels and 12 nutrient data sets for dry-roasted almonds for the database update in late 2013 (SR26).



ALMOND NUTRIENT COMPARISON (per 100g)

NUTRIENTS (per 100g)	WHOLE ALMOND FORMS[1]						
	UNITS (per 100g)	NATURAL[2]	BLANCHED[3]	OIL ROASTED SALTED[4]	OIL ROASTED UNSALTED[5]	DRY ROASTED SALTED[6]	DRY ROASTED UNSALTED[7]
PROXIMATES							
CALORIES[8]	kcal	579	590	607	607	598	598
WATER	g	4.41	4.51	2.80	2.80	2.41	2.41
PROTEIN	g	21.15	21.40	21.23	21.23	20.96	20.96
LIPIDS (TOTAL)	g	49.93	52.52	55.17	55.17	52.54	52.54
DIETARY FIBER (TOTAL)	g	12.5	9.9	10.5	10.5	10.9	10.9
SUGARS (TOTAL)	g	4.35	4.63	4.55	4.55	4.86	4.86
ASH	g	2.97	2.91	3.13	3.13	3.07	3.07
MINERALS							
CALCIUM (CA)	mg	269	236	291	291	268	268
IRON (FE)	mg	3.71	3.28	3.68	3.68	3.73	3.73
MAGNESIUM (MG)	mg	270	268	274	274	279	279
PHOSPHORUS (P)	mg	481	481	466	466	471	471
POTASSIUM (K)	mg	733	659	699	699	713	713
SODIUM (NA)	mg	1	19	339	1	498	3
ZINC (ZN)	mg	3.12	2.97	3.07	3.07	3.31	3.31
COPPER (CU)	mg	1.03	1.03	0.96	0.96	1.10	1.10
MANGANESE (MN)	mg	2.18	1.84	2.46	2.46	2.23	2.23
VITAMINS							
VITAMIN E (ALPHA-TOCOPHEROL)	mg	25.63	23.75	25.97	25.97	23.90	23.90
THIAMIN	mg	0.21	0.19	0.09	0.09	0.08	0.08
RIBOFLAVIN	mg	1.14	0.71	0.78	0.78	1.20	1.20
NIACIN	mg	3.62	3.50	3.67	3.67	3.64	3.64
PANTOTHENIC ACID	mg	0.47	0.31	0.23	0.23	0.32	0.32
VITAMIN B6	mg	0.14	0.12	0.12	0.12	0.14	0.14
FOLATE, FOOD	mcg	44	49	27	27	55	55
FATTY ACIDS							
SATURATED (TOTAL)	g	3.80	3.95	4.21	4.21	4.09	4.09
16:0 PALMITIC	g	3.08	3.27	3.30	3.30	3.35	3.35
18:0 STEARIC	g	0.70	0.67	0.91	0.91	0.70	0.70
MONOUNSATURATED (TOTAL)	g	31.55	33.42	34.79	34.79	33.08	33.08
16:1 PALMITOLEIC	g	0.23	0.24	0.22	0.22	0.26	0.26
18:1 OLEIC	g	31.29	33.11	34.58	34.58	32.75	32.75
POLYUNSATURATED (TOTAL)	g	12.33	12.37	13.52	13.52	12.96	12.96
18:2 LINOLEIC	g	12.32	12.37	13.52	13.52	12.95	12.95

1. U.S. Department of Agriculture, Agricultural Research Service, Nutrient Data Labratory. USDA National Nutrient Database for Standard Reference, Release 28. Version Current: September 2015. http://www.ars.usda.gov/nea/bhnrc/ndl.
2. USDA SR25 Nutrient Database No. 12061 Nuts, almonds.
3. USDA SR25 Nutrient Database No. 12062 Nuts, almonds, blanched (skin removed).
4. USDA SR25 Nutrient Database No. 12565 Nuts, almonds, oil roasted, with salt added.
5. USDA SR25 Nutrient Database No. 12065 Nuts, almonds, oil roasted, without salt added.
6. USDA SR25 Nutrient Database No. 12563 Nuts, almonds, dry roasted, with salt added.
7. USDA SR25 Nutrient Database No. 12063 Nuts, almonds, dry roasted, without salt added.
8. A 2012 study published in the *American Journal of Clinical Nutrition* suggests that when measuring digestibility, whole almonds provide about 20% fewer calories than originally thought. The findings show a one-ounce (28g) serving of almonds (about 23) has 129 calories versus the 160 calories currently listed on the Nutrition Facts Panel. Further research is needed to better understand the results of the study and how this technique for calculating calories could potentially affect the calorie count of other foods.