

Almond Nutrient Comparison

Background

The USDA has been responsible for analyzing the nutrient content of the U.S. national food supply for more than 115 years. The first food composition tables were published in 1891 by W.O. Atwater and C.D. Woods, who compiled the water, fat, protein, ash, and carbohydrate content of approximately 200 different foods.

Today, the USDA National Nutrient Data Bank is a repository of information for more than 130 nutrients for more than 7,500 foods. By definition a “standard reference” is a body of work that is widely recognized or employed as a model of authority or excellence. Thus, USDA Standard Reference (SR) database is recognized globally as the most comprehensive collection of nutrient data and provides the foundation for most public and private sector nutrient databases.

Since 1992, updated data have been published electronically on the USDA Nutrient Data Laboratory (NDL) website:
<http://www.nal.usda.gov/fnic/foodcomp/search>.

New versions of the database are released annually, with the current version (SR22) released in September 2009.

USDA Data Submission Requirements

Nutrient data may be submitted from the food industry, government agencies and other sources. USDA requires the following information when submitting sample data:

- Analytical Information (testing date, laboratory name/location, analytical methods)
- Sample Strategy (where sample obtained, number of samples tested)
- Marketing Data (product identification)
- Production Statistics (percent of total crop each variety constitutes)

Electronic data is preferred, and submitted data is checked for accuracy against hard copy

laboratory reports. Once the data is verified, it is then compiled using a proprietary algorithm to achieve a “market basket” nutrient set and incorporated into the next database release, which generally occurs in the summer. This “market basket” approach adjusts for differences in product varieties, sample size, percent of each variety consumed and other factors to more closely represent the overall nutrient content of items purchased by consumers across the United States, throughout the year.

ABC Contributions to USDA Standard Reference (SR) Databases

This was first done in collaboration with the International Tree Nut Council in 1998 for the principal almond varieties and forms representing the entire growing region of California’s Central Valley, from Red Bluff to Bakersfield, and resulted in the USDA revising its nutrient database for almonds in 1999. In 2001, the USDA started to expand their nutrient database to include specialty ones that provide detailed information on all forms of phytosterols, vitamin E and flavonoids in foods.

ABC Contributions to USDA SR20 - 2007

On February 28th, 2007, 84 nutrient data sets for natural whole almonds were sent to the USDA for inclusion in the SR20 USDA database. This data from 2001 - 2006 included Nonpareil, Carmel, Butte, Sonora, Fritz, Mission, Monterey, Fritz and Padre varieties that had been used in ABC funded nutrition research projects. Based on that data submission, USDA incorporated this new data into SR20 which was released in September 2007.

Overview of Information Submitted to USDA

The nutrient analyses for whole natural almonds of these major varieties were submitted to USDA in Spring 2007, along with the accompanying production statistics.

Almond Nutrient Comparison (/100g)		Whole Almond Forms ¹					
		Natural ²	Blanched ³	Oil Roasted Salted ⁴	Oil Roasted Unsalted ⁵	Dry Roasted Salted ⁶	Dry Roasted Unsalted ⁷
Nutrients	Units						
PROXIMATES							
Water	g	4.70	4.51	2.80	2.80	2.53	2.53
Protein	g	21.22	21.40	21.23	21.23	21.06	21.06
Lipids (total)	g	49.42	52.52	55.17	55.17	52.05	52.05
Dietary fiber (total)	g	12.20	9.90	10.50	10.50	10.90	10.90
Sugars (total)	g	3.89	4.63	4.55	4.55	4.93	4.93
Ash	g	2.99	2.91	3.13	3.13	3.15	3.15
MINERALS							
Calcium (Ca)	mg	264	236	291	291	267	267
Iron (Fe)	mg	3.72	3.28	3.68	3.68	3.83	3.83
Magnesium (Mg)	mg	268	268	274	274	281	281
Phosphorus (P)	mg	484	481	466	466	470	470
Potassium (K)	mg	705	659	699	699	712	712
Sodium (Na)	mg	1	19	339	1	339	3
Zinc (Zn)	mg	3.08	2.97	3.07	3.07	3.30	3.30
Copper (Cu)	mg	1.00	1.03	0.96	0.96	1.11	1.11
Manganese (Mn)	mg	2.29	1.84	2.46	2.46	2.31	2.31
VITAMINS							
Vitamin E (alpha tocopherol)	mg	26.22	23.75	25.97	25.97	23.80	23.80
Thiamin	mg	0.21	0.19	0.09	0.09	0.08	0.08
Riboflavin	mg	1.01	0.71	0.78	0.78	0.97	0.97
Niacin	mg	3.39	3.50	3.67	3.67	3.55	3.55
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	0.13	0.13
Folate, food	mcg	50	49	27	27	53	53
FATTY ACIDS							
Saturated (total)	g	3.73	3.95	4.21	4.21	4.03	4.03
16:0 Palmitic	g	3.04	3.27	3.30	3.30	3.31	3.31
18:0 Stearic	g	0.66	0.67	0.91	0.91	0.71	0.71
Monounsaturated (total)	g	30.89	33.42	34.79	34.79	32.38	32.38
16:1 Palmitoleic	g	0.24	0.24	0.22	0.22	0.25	0.25
18:1 Oleic	g	30.61	33.11	34.58	34.58	32.07	32.07
Polyunsaturated (total)	g	12.07	12.37	13.52	13.52	13.00	13.00
18:2 Linoleic	g	12.06	12.37	13.52	13.52	12.99	12.99

Notes:

¹ USDA National Nutrient Database for Standard Reference website: <http://www.nal.usda.gov/fnic/foodcomp/search/>

² USDA SR23 Nutrient Database No. 12061 Nuts, almonds, whole, natural

³ USDA SR23 Nutrient Database No. 12062 Nuts, almonds, blanched

⁴ USDA SR23 Nutrient Database No. 12565 Nuts, almonds, oil roasted, with salt added

⁵ USDA SR23 Nutrient Database No. 12065 Nuts, almonds, oil roasted, without salt added

⁶ USDA SR23 Nutrient Database No. 12563 Nuts, almonds, dry roasted, with salt added

⁷ USDA SR23 Nutrient Database No. 12063 Nuts, almonds, oil roasted, without salt added