Composition of Blueberries

www.blueberry.org

US HIGHBUSH BLUEBERRY COUNCIL

- A one cup serving of blueberries contains 14% DV of fiber.
- Blueberries are a source of Vitamin C, potassium, antioxidants and flavonoids.
- Blueberries are very low in fat and sodium.

Blueberry Classification

All blueberries belong to the genus *Vaccinium*. The family includes the Highbush (*V. corymbosum* and *V. ashei*) and the Native American "wild" low bush (*V. augustifolium*). All blueberries originated from the wilds. Highbush blueberries Represent 57% of total North American blueberry production.

Note: Fruit maturity at harvest, growing condition, type of cultivar, and other variables affect levels. Substances and amounts shown are for general information only.

USDA National Nutrient Database

For Standard Reference, Release 20 (2007)

	Nutrients	1/2 cup 72.5 g (2.56 oz)	100 g (3.5 oz)	
	Food energy	42	57	Kcal
Proximate	Protein	0.55	0.74	g
	Total lipid (fat)	0.24	0.33	g
	Carbohydrate	10.72	14.49	g
	Dietary fiber	1.8	2.4	g
	Ash	0.18	0.24	g
	Water	62.32	84.21	g
Minerals	Calcium	4	6	mg
	Copper	0.042	0.057	mg
	Iron	0.21	0.28	mg
	Magnesium	4	6	mg
	Manganese	0.249	0.336	mg
	Phosphorus	9	12	mg
	Potassium	57	77	mg
	Selenium	0.1	0.1	µg
	Sodium	1	1	mg
	Zinc	0.12	0.16	mg
Vitamins	Vitamin C	7.2	9.7	mg
	Thiamin	0.027	0.037	mg
	Riboflavin	0.03	0.041	mg
	Niacin	0.309	0.418	mg
	Pantothenic acid	0.092	0.124	mg
	Vitamin B-6	0.038	0.052	mg
	Folate	4	6	µg
	Choline, total	4.4	6	mg
	Betaine	0.1	0.2	mg
	Vitamin A, IU	40	54	IU
	Vitamin E (alpha tocopherol)	0.42	0.57	mg
	Vitamin K (phyilloquinone)	14.3	19.3	µg

g=grams mg=milligrams kcal=kilocalories IU=International Units µg=micrograms

US HIGHBUSH BLUEBERRY COUNCIL
c/o Thomas J. Payne Market Development, 865 Woodside Way, San Mateo, CA 94401-1611
Phone: 800-824-6395 Fax: 650-340-8568 Email: bberry@blueberry.org

Flavonoid Content (1)

The *USDA Database for Flavonoids* was created in response to interest by the scientific community in types of flavonoid compounds and their varied biological properties.

Subclass	Flavonoid	Mean mg/100 g. edible portion
Anthocyanidins	Cyanidin	16.97
	Delphinidin	47.40
	Malvidin	61.35
	Peonidin	11.38
	Petunidin	26.42
Flavan-3-ols	(-)-Epicatechin	13.69
	(-)-Epigallocatechin	0.66
	(+)-Catechin	37.24
	(+)-Gallocatechin	0.12
Flavones	Luteolin	0.20
Flavonols	Kaempferol	1.81
	Myricetin	2.66
	Quercetin	5.05

1.USDA Database for the Flavonoid Content of Selected Foods., Release 2.1 (2007). Nutrient Data Laboratory, Food Composition Laboratory, Beltsville Human Nutrition Research Center, ARS.

Proanthocyanidin Content (2)

The free radical scavenging properties of proanthocyanidins including their potential for risk reduction of cardiovascular diseases, cancer, blood clotting and protection against urinary tract infections have been under investigation by scientists.

Proanthocyanidin	Mean mg/100 g. edible portion
Monomers	3.46
Dimers	5.71
Trimers	4.15
4-6mers	19.57
7-10mers	14.55
Polymers	129.05

2.USDA Database for the Proanthocyanidin Content of Selected Foods. Nutrient Data Laboratory, Beltsville Human Nutrition Research Center, ARS, August 2004.

Oxygen Radical Absorbance Capacity (ORAC) (3)

The ORAC assay is a measure of antioxidant capacity. It is considered by some to be a preferable method because of its biological relevance to the in vivo antioxidant efficacy.

Parameter	Unit	Mean
H-ORAC	umol TE/100 g	6520
L-ORAC	umol TE/100 g	36
Total-ORAC	umol TE/100 g	6552
Total Phenolics	mg GAE/100 g	531

3.Oxygen Radical Abosrbance Capacity (ORAC) of Selected Foods – 2007. Nutrient Data Laboratory, Beltsville Human Nutrition Research Center, ARS, USDA in collaboration with Arkansas Children's Nutrition Center, ARS, USDA, Little Rock, AR.

Blueberry Composition Research

The composition of blueberries can be affected by many factors including the type of cultivar, the environmental conditions, and the stage of ripening.

Castrejon ADR, Eichholz I, Rohn S, Kroh LW, Huyskens-Keil S. Phenolic profile and antioxidant activity of highbush blueberry (*Vaccinium corymbosum* L.) during fruit maturation and ripening. Food Chem. 2008; 109:564-572.

The total phenolic content and primary phenolic compounds of four highbush blueberry cultivars were analyzed at different stages of maturation and ripening. Anthocyanins increased during successive harvest stages while flavonols and hydroxycinnamic acids decreased from the unripe green stage to the ripe blue stage of berry ripening. The antioxidant activity and the total phenolic content of the blueberries tended to decrease during ripening.

Vicente AR, Ortugno C, Rosli H, Powell ALT, Greve LC, Labavitch JM. Temporal sequence of cell wall disassembly events in developing fruits. 2. Analysis of blueberry (*Vaccinium* species). J Agric Food Chem. 2007; 55:4125-4130.