

**BLACK
DIAMOND®**



In 2000 the Produce for Better Health Foundation, in collaboration with the USDA, undertook a project to assay a broad range of fruits, vegetables and nuts for antioxidants and other phytonutrient compounds. They utilized a 'market-basket' sampling technique that involved collecting samples from supermarkets in 24 cities (rural, urban, and suburban), that statistically represent the US population. The purpose of the study was to develop the most comprehensive standardized phytonutrient database to date.

Sun World, a founding sponsor of the 5-a-Day Program, a partnership effort by the Produce for Better Health Foundation and the National Cancer Institute, was offered an opportunity to include BLACK DIAMOND brand plums in the study. Sun World felt that BLACK DIAMOND, a red-fleshed black plum, would rate higher in antioxidant activity than other plums in the study due to higher levels of antioxidant-rich pigments in the flesh and skin (read article: [Plant Pigments Paint a Rainbow of Antioxidants](#)).

Results showed that BLACK DIAMOND plums have high levels of Beta Carotene and Total ORAC (Oxygen Radical Absorbance Capacity). BLACK DIAMOND plums not only beat our other plums in the study, but with a Total ORAC value of 7581, they were 15.7% higher than Blueberries with regard to antioxidant capacity.

Top Antioxidant Fruits and Vegetables*

[ORAC units per 100 grams**]

<i>Fruits</i>		<i>Fruits, cont</i>	
Cranberries	9584	Grapefruit, Pink	1548
BLACK DIAMOND® Plums	7581	Grapes, Red	1260
Plums, Dried (Prunes)	6552	Lemons	1225
Blueberries	6552	Kiwi, Gold	1210
Plums, Mixed	6259	Grapes, White	1118
Blackberries	5347	Apricots	1115
Raspberries	4882	Mangos	1002
Strawberries	3577	<i>Vegetables</i>	
Figs	3383	Artichokes	6552
Cherries	3365	Cabbage, Red	2252
Apples, Mixed	3082	Asparagus	2150
Raisins	3037	Beets	1767
Avocados, Hass	1933	Radishes	1736
Pears, green	1911	Onions, Red	1521
Oranges, navels	1819	Spinach	1515
Peaches	1814	Lettuce, Leaf	1447
Pears, Red Anjou	1746	Broccoli	1362
Tangerines	1620	Potatoes, Russet	1322

*Source: Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods-2007, USDA-ARS Nutrition Data Laboratory

**umol TE/100 g

The Importance of ORAC Measurement

-From *Can Antioxidant Foods Forestall Aging?* USDA Food and Nutrition Research Briefs in April 1999.

Foods that score high in an antioxidant assay called ORAC may protect cells and their components from damage by oxygen radicals, according to studies of animals and human blood. ORAC measures the total antioxidant power of foods and other chemical substances. Early findings suggest that eating plenty of high-ORAC fruits and vegetables—such as spinach and blueberries—may help slow the processes associated with aging in both body and brain.

Two human studies show that eating high-ORAC fruits and vegetables or simply doubling intake of fruits and vegetables—both naturally high in antioxidants—raise the antioxidant power of the blood between 13 and 25 percent. The studies are published in the *Journal of Nutrition* (vol. 128, pp. 2383-2390) and the *American Journal of Clinical Nutrition* (vol. 68, pp. 1081-1087).

Early evidence for the protective power of high-ORAC foods comes from rat studies. Rats fed daily doses of blueberry extract for six weeks before being subjected to pure oxygen suffered much less damage to the capillaries in and around their lungs. In other tests, middle-aged rats were fed diets fortified with spinach or strawberry extract or vitamin E for nine months. A daily dose of spinach extract prevented some loss of long-term memory and learning ability normally experienced by 15-month-old rats. Spinach also proved most potent in protecting different types of nerve cells in two separate parts of the brain against the effects of aging, the researchers reported in the *Journal of Neuroscience* (vol. 18, pp. 8047-8055).

For Licensing Questions Contact:

Senior V.P., Licensing & Corporate Development: [David Marguleas](#)

Sun World International, LLC

[Licensing Department](#)

52-200 Industrial Way

Coachella, California USA 92236

tel: 1.760.398.9300