

Antioxidant Riches Found in Unexpected Foods

Beans, Berries, Spices, and Potatoes Are Antioxidant Powerhouses

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WebMD Medical News

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June 17, 2004 -- Blueberries may be the poster children for antioxidant abundance, but a new study suggests the humble bean may be a more deserving candidate.

The largest and most advanced analysis of the antioxidant content of common foods to date shows that disease-fighting antioxidants may be found in unexpected fruits and vegetables, such as beans, artichokes, and even the much-maligned Russet potato.

Researchers found that small red beans contain more disease-fighting antioxidants than both wild and cultivated blueberries, which have been heralded in recent years for their high antioxidant content. In fact, three of the top five antioxidant-rich foods studied were beans.

The study also shows that nuts and spices, such as ground cloves, cinnamon, and oregano, are rich in antioxidants, although they are generally consumed in much smaller amounts than fruits and vegetables.

Antioxidants are believed to help prevent and repair oxidative stress, a process that damages cells within the body and has been linked to the development of cancer, heart disease, Alzheimer's disease, and .

Ranking Antioxidant-Rich Foods

The study, which appears in the June 9 issue of the *Journal of Agricultural and Food Chemistry*, used updated technology to assess the antioxidant content of more than 100 foods, including fruits, vegetables, cereals, breads, nuts, and spices.

Each food was analyzed for antioxidant concentration and ranked according to antioxidant capacity per serving size. But researchers note that the total antioxidant capacity of a food does not necessarily reflect their potential health benefit.

"A big factor in all of this is what happens in the digestion and absorption process," says Researcher Ronald Prior, PhD, a chemist and nutritionist with the USDA's Arkansas Children's Nutrition Center in Little Rock, Ark. "With some of these compounds, it appears that even though they have a high antioxidant capacity, they may not be absorbed."

Cranberries, blueberries, and blackberries were ranked highest among the fruits studied. Beans, artichokes, and Russet potatoes were tops among the vegetables.

Pecans, walnuts, and hazelnuts were the winners in the nut category, and ground cloves, cinnamon, and oregano were the top three antioxidant-rich spices.

Here's the list of the top 20 food sources of antioxidants, based on their total antioxidant capacity per serving size:

<i>Rank</i>	<i>Food item</i>	<i>Serving size</i>	<i>Total antioxidant capacity per serving size</i>
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1	Small Red Bean (dried)	Half cup	13727
2	Wild blueberry	1 cup	13427
3	Red kidney bean (dried)	Half cup	13259
4	Pinto bean	Half cup	11864
5	Blueberry (cultivated)	1 cup	9019
6	Cranberry	1 cup (whole)	8983
7	Artichoke (cooked)	1 cup (hearts)	7904
8	Blackberry	1 cup	7701
9	Dried Prune	Half cup	7291
10	Raspberry	1 cup	6058
11	Strawberry	1 cup	5938
12	Red Delicious apple	One	5900
13	Granny Smith apple	One	5381
14	Pecan	1 ounce	5095
15	Sweet cherry	1 cup	4873
16	Black plum	One	4844
17	Russet potato (cooked)	One	4649
18	Black bean (dried)	Half cup	4181
19	Plum	One	4118
20	Gala apple	One	3903

Researchers also found that cooking method also had a significant effect on the antioxidant content of the foods tested, but those effects were not consistent.

For example, cooked Russet and red potatoes had much lower antioxidant levels than those found in raw potatoes. Boiling also decreased antioxidant levels in carrots, but cooking tomatoes increased their antioxidant content.