

## National Nutrient Database Now Includes More Vitamin D Values

The United States Department of Agriculture's (USDA) release 22 of the National Nutrient Database for Standard Reference has been updated to include vitamin D values for more food entries—including mushrooms, the only fruit or vegetable with natural vitamin D.

Similar to the way that humans absorb sunlight and convert it to vitamin D, mushrooms contain a sterol—ergosterol—that converts to vitamin D when exposed to sunlight. The top three selling mushroom varieties (button, crimini and portabella) have vitamin D ranging from 1 to 97 percent of the Daily Value (400 IU) per raw 84 gram serving.

The inclusion of vitamin D values for mushrooms in the database enables health professionals to assess consumers' intake of vitamin D and use mushrooms to help meet their dietary needs.

There is a substantial amount of research and public health interest in the role of vitamin D in health, bringing attention to this important vitamin for consumers and health professionals alike.

- This year, the Institute of Medicine (IOM) convened a committee on calcium and vitamin D to determine if the current intake recommendations should be increased for all Americans. The report is expected in 2010.
- The American Academy of Pediatrics doubled the amount of vitamin D it recommends for children and infants to 400 IU in 2008.
- An emerging body of science, including laboratory, animal and epidemiological studies, suggests that higher intakes of vitamin D may be protective against some cancers, including pancreatic, breast, colon and colorectal cancers.<sup>1,2,3,4</sup>
- Scientists are also exploring links between low vitamin D status and increased risk for a number of chronic diseases, including heart disease, type 1 diabetes, and multiple sclerosis.<sup>5,6,7</sup>

The USDA Nutrient Database is available for anyone to search or download from the Nutrient Data Laboratory Web site. It contains nutrient data for over 7,500 food items for up to 143 food components, such as vitamins, minerals, amino acids, and fatty acids. It is the foundation of most food and nutrition databases in the U.S., used for determining the nutritional components of recipes, along with serving as a resource in food policy and research.

The USDA Nutrient Database can be found at the following Web site: [www.ars.usda.gov/nutrientdata](http://www.ars.usda.gov/nutrientdata).

<sup>1</sup> Skinner HG, Michaud DS, Giovannucci E, Willett WC, et al. Vitamin D intake and the risk for pancreatic cancer in two cohort studies. *Cancer Epidemiol Biomarkers Prev.* 2006;15(9):1688-1695.

<sup>2</sup> Giovannucci E, Liu Y, Rimm EB, Hollis BW, et al. Prospective study of predictors of vitamin D status and cancer incidence and mortality in men. *J Natl Cancer Inst.* 2006;98:451-9.

<sup>3</sup> Spina CS, et al. Vitamin D and cancer. *Anticancer Res.* 2006;26(4A):2515-24.

<sup>4</sup> Palmieri C, MacGregor T, Girgis S, Vigushin D. Serum 25 hydroxyvitamin D levels in early and advanced breast cancer. *J Clin Pathol.* 2006; online edition: <http://jcp.bmj.com/cgi/content/abstract/59/12/1334>

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<sup>5</sup> Zitterman A, Koerfer R. Vitamin D in the prevention and treatment of coronary heart disease. *Curr Opin Clin Nutr Metab Care.* 2008 Nov;11(6):752-7.

<sup>6</sup> Bailey R, et al. Association of the vitamin D metabolism gene CYP27B1 with type 1 diabetes. *Diabetes.* 2007 Oct;56(10):2616-21. Epub 2007 Jul 2.

<sup>7</sup> Munger KL, et al. Serum 25-hydroxyvitamin D levels and risk of multiple sclerosis. *JAMA.* 2006 Dec 20;296(23):2832-8.

## Mushrooms Go Pink for Breast Cancer Research

- The Mushroom Council has provided \$700,000 to City of Hope's cancer research program and this year turned boxes of mushrooms pink to raise further awareness. These pink tills were in stores nationwide mid-September to mid-November.



- The Mushroom Council once again participated in the American Dietetic Association's (ADA) annual Food and Nutrition Conference and Expo (FNCE) held in Denver, CO from October 17-20. This year, to highlight the research on breast cancer and mushrooms being conducted at City of Hope, the booth structure was given a pink facelift. A "Wall of Pink" was created by pink packages signed by attendees in support of cancer research and in honor of survivors or lost loved ones. Also, for every person who stopped at the booth (to get their attendee ID card scanned), the Mushroom Council provided additional funding to City of Hope.
- Follow the Mushroom Council on Twitter (<http://twitter.com/MushroomChannel>) or the blog, [www.mushroomchannel.com](http://www.mushroomchannel.com) for updates on research, recipes and tips.

## Food Safety Initiative for the Mushroom Industry

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American Mushroom Institute

The top priority for mushroom growers is ensuring the safety of the product they grow and ship to consumers. And like the nutrition community, they realize an ounce of prevention is worth a pound of cure.

Mushroom growers have long followed the basic principles of food safety, such as training workers in good hygiene practices, identifying potential hazards and maintaining a sanitation program. With the advantage of being grown indoors in climate controlled environments, mushrooms do not face some of the challenges of outdoor crops.

However, following the foodborne illness outbreaks associated with leafy greens in 2006, foodservice and retail customers began requiring on-farm food safety inspections. The mushroom industry quickly realized that the same auditing standards used for other produce items didn't make sense for the unique growing conditions of

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## Tasteful Treasure

This tasty recipe is enriched with delicious, nutrient-rich mushrooms along with smoked salmon. It is perfect to serve at a special breakfast occasion or as an impressive appetizer!

### Mushroom and Smoked Salmon Frittata

Serves: 6 (or 12 as an appetizer)

Preparation Time: 15 minutes

Cooking Time: 5 minutes

1 tablespoon light butter  
8 ounces white button or crimini mushrooms, thinly sliced  
1/4 teaspoon pepper  
3 large eggs  
6 large egg whites  
1/3 cup green onions, thinly sliced  
12 ounces smoked salmon, chopped\*  
2 tablespoons grated parmesan cheese

Heat oven to broil with top rack about 4" from broiler

Heat a 10" nonstick, oven-proof skillet over medium high heat. Melt butter until foamy. Add a single layer of mushrooms and cook, without stirring, for about 5 minutes or until mushrooms become red-brown on one side. Season with salt and pepper. Flip and cook about 5 minutes more, until other side is same color. Reduce heat to medium low.

In a large bowl, whisk eggs until frothy and add onions. Pour over mushroom mixture and stir once or twice to combine, gently lifting set eggs from bottom of the pan, letting the loose mixture set on the bottom. Add smoked salmon. Cover and continue to cook, without stirring, for 5 minutes, until eggs are set. Sprinkle with cheese and place pan under broiler until cheese melts, about 2 minutes.

Remove pan from oven, place a plate over the pan. Quickly turn the frittata onto the plate. Cut into wedges and serve.

**Hint:** to save money, purchase "lox trimmings" which are available at most major grocery stores. This recipe also works well as a mushroom only frittata. Substitute 3/4 cup shredded swiss or herbed cream cheese for the smoked salmon.



**Each serving provides:** 280 calories, 11g fat (17% Daily Value), 3.5g saturated fat (18% DV), 195mg cholesterol (65% DV), 260mg sodium (11% DV), 43g protein, 89% DV for selenium, 6% DV for vitamin A, 22% DV for potassium, 8% DV for iron, 4% DV for vitamin C, 8% DV for calcium, 54% DV for vitamin D

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mushroom production. Working in conjunction with food safety experts at Penn State University, the U.S. Department of Agriculture and the U.S. Food and Drug Administration, the industry took the initiative to develop guidelines for identification and control of potential food safety hazards specifically in mushroom growing and packing operations.

In late 2008, the industry launched its commodity-specific Mushroom Good Agricultural Practices (MGAP) program. The MGAP program provides a set of standards and procedures that mushroom growers can use to enhance and document safe mushroom growing practices. These standards are consistent with current food safety guidelines for the fresh produce industry described in the Food and Drug Administration (FDA) document "Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables."

To document compliance, third party inspectors visit farms using a commodity-specific audit based on the standards outlined in the mushroom industry's best practices document. The MGAP audit is only the third commodity specific audit developed with the assistance of USDA and is the only one that is national in scope.

To date, approximately 40 farms have successfully passed MGAP audits conducted by USDA and private, third party auditors. The industry has now set a goal to have all mushrooms sold in the United States to be "MGAP certified."

## Mushrooms Score Well Across the Board

The Food and Drug Administration (FDA) is looking into the different types of front of pack and retail shelf labeling systems to determine if consumers are receiving consistent, useful nutrition information that is not misleading. In addition, it may consider proposed regulation to define the criteria for nutrition symbols on packages.

Currently, food manufacturers and retail stores often participate in "nutrient profiling systems" to help consumers evaluate food products at retail and make decisions based on nutrient factors. While the Mushroom Council does not support or partner with any of the systems, mushrooms score very well in all of the top systems due to mushrooms being low in calories, fat-free, cholesterol-free and very low in sodium, yet still providing several nutrients, including riboflavin, niacin, and selenium.

This is good news for Americans since research shows that many people are buying and eating mushrooms. In fact, Rose Research, a marketing research company, showed that mushrooms were consumers' third favorite fresh vegetable, after tomatoes and broccoli. According to FreshLook Marketing Group, mushrooms are among the top 20 sellers in grocery produce departments.

The Mushroom Council is composed of fresh market producers or importers who average more than 500,000 pounds of mushrooms produced or imported annually. The mushroom program is authorized by the Mushroom Promotion, Research and Consumer Information Act of 1990 and is administered by the Mushroom Council under the supervision of the Agricultural Marketing Service. Research and promotion programs help to expand, maintain and develop markets for individual agricultural commodities in the United States and abroad. These industry self-help programs are requested and funded by the industry groups that they serve. For more background information as well as useful recipes, tools and references, please visit [www.MushroomInfo.com](http://www.MushroomInfo.com) and our interactive blog, The Mushroom Channel ([www.mushroomchannel.com](http://www.mushroomchannel.com)).

