



Blackberry Fruit: Nutrition Facts and Health Benefits

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Introduction

With its inky purple color, juicy bursts of sweet and tart flavor, and multiple health benefits, the blackberry fruit (*Rubus* spp.) is gaining increasing attention from consumers. Many varieties of blackberries are cultivated in the Commonwealth of Virginia. These include “Navaho,” “Ouachita,” “Chester,” and “Chickasaw” (Conway and Samtani 2015). This article focuses on the blackberry fruit’s nutritive values and benefits and includes a few recipes for preparing it in creative ways.



Figure 1 (a) and (b): Blackberry fruits change color from green to red to deep purple as they ripen and are finally picked when they have a shiny black or dull black appearance. (Photos by Tianyou Xu, taken at the Hampton Roads Agricultural Research and Extension Center, Virginia Beach, VA)

Benefits of Blackberry Consumption

The blackberry fruit is packed with vitamins C, K, and E. The fruit is rich in dietary fiber and low in sugar. It also contains numerous phytochemicals, such as

anthocyanin, a significant contributor to human health (USDA-ARS 2019). Through laboratory experiments and animal model studies, researchers found that the phenolic compounds in blackberries could have the ability to prevent chronic and inflammatory diseases and various types of cancers and could reduce the chances of age-related cognitive disorders (Kaume, Howard, and Devareddy 2012).

Nutrition Facts	
Serving size	1 Cup (144g)
Amount Per Serving	
Calories	60
<small>% Daily Value*</small>	
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 0mg	0%
Total Carbohydrate 14g	5%
Dietary Fiber 8g	29%
Total Sugars 7g	
Includes 0g Added Sugars	0%
Protein 2g	4%
Vitamin D 0mcg	0%
Calcium 42mg	4%
Iron 1mg	6%
Potassium 235mg	4%
Vitamin C 30.2mg	35%
Vitamin E 1.68mg	10%
Vitamin K 28.5mcg	25%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Figure 2: Nutrition Facts label for fresh blackberries.

Note: Nutrition Facts labels are normally not required for fresh fruits and vegetables. This makes it hard for consumers to determine and compare their nutrition values. Tianyou Xu generated this label using information from the U.S. Department of Agriculture database for "Blackberries, Raw" (USDA-ARS 2019) and from daily values provided by the U.S. Food and Drug Administration (U.S. FDA 2020).

Vitamin C

Vitamin C is also known as ascorbic acid. Each cup of blackberries contains about 30 milligrams of vitamin C (USDA-ARS 2019), which is equivalent to 35% of the daily value. In other words, by eating a cup of blackberries, a person gets over one-third of the daily needs for vitamin C. Consuming vitamin C can help the body fight against free radicals, which are toxic compounds that form naturally in the human body when food is converted into energy (U.S. DHHS 2021).

Free radicals also form when the body is exposed to pollution, cigarette smoke, or UV light from the sun (U.S. DHHS 2021). A phenomenon called oxidative stress can occur when the body accumulates free radicals over time, and this can result in chronic or acute illness, inflammation, and aging (Pham-Huy, He, and Pham-Huy 2008). Diets rich in vitamin C from fresh fruits and vegetables might reduce people's chances of getting many types of cancers or cardiovascular diseases (U.S. DHHS 2021). Vitamin C is water-soluble and heat-sensitive, so it is best to eat fresh, uncooked blackberry fruit.

Vitamin E

Every cup of blackberries consumed provides 10% of the daily value of vitamin E (USDA-ARS 2019). While vitamin C reduces the number of free radicals in our body by fighting against them, vitamin E acts as a safeguard and protects the human body from being damaged by the free radicals (U.S. DHHS 2021). Vitamin E not only protects the cells and boost the immune system, but also is great for the skin. While scientific evidence is limited, some contend that the fat-soluble vitamin's antioxidant properties could enable it to nourish skin fat, reduce wrinkles, and slow skin aging (Tannis 2009; Akin et al. 2016).

Vitamin K

Blackberries are also rich in vitamin K. Every cup of blackberries provides 28.5 milligrams of vitamin K. That amounts to a quarter of one's daily needs (USDA-ARS 2019). Vitamin K provides two key benefits for the human body: It defends blood clotting and supports

healthy bones. Although uncommon in the United States, vitamin K deficiency raises a person's risk of osteoporosis, a medical condition in which the loss of bone density causes bones to become porous, fragile, and more prone to fracture (U.S. DHHS 2021).

Dietary Fiber

Blackberries are great sources of dietary fiber (USDA-ARS 2019). Dietary fiber is a type of carbohydrate that human small intestines cannot digest or absorb, and it does not count toward caloric intake (Dhingra et al. 2012). Each cup of blackberries contains 8 grams of dietary fiber, which is equivalent to 29% of the daily value (USDA-ARS 2019).

Blackberries contain both soluble and insoluble fibers: about 2.8 grams of soluble fiber per 100 grams of dry weight and 33.4 grams of insoluble fiber per 100 grams of dry weight (Marlett and Vollendorf 1994). Insoluble fiber is less fermentable and can help prevent constipation and enable food to pass through the gut more quickly (Bae 2014). Fermented soluble fibers can bind with the cholesterol inside the large intestine and remove it from the body; keeps it from entering the bloodstream. It also forms a gel in the stomach, which extends the feeling of satiety and helps with weight loss (Threapleton et al. 2013). Dietary fiber intake also lowers the risk of cardiovascular diseases and coronary heart diseases (Threapleton et al. 2013). Despite the benefits that dietary fiber can offer, only 5% of the U.S. population meet the recommended daily intake (Quagliani and Felt-Gunderson 2017).

Anthocyanins: The Mysterious Purple

The blackberry fruit is known for its deep purple color, and the masked hero that contributes to this beautiful color is anthocyanins (Khoo et al. 2017). Anthocyanins are water-soluble pigments that provide fruits and vegetables such as blackberry, raspberry, and purple corn their signature purple, blue, and red colors (Kong et al. 2003). The colors that anthocyanins produce depend on pH, light, and temperature. The colors appear reddish in more acidic conditions and turn blue if the pH increases (Khoo et al. 2017).

Anthocyanins are a subgroup of phenolic compounds, which help regulate blood pressure, reduce body inflammation, protect brain health, and enhance cognitive function (Igwe, Charlton, and Probst 2019). Many studies have shown that anthocyanins could also alleviate diabetes and provide anticancer and antioxidant effects (Khoo et al. 2017).

Ideas for Incorporating Blackberries Into Your Diet

Incorporating blackberries into your daily diet is a good way to increase your intake of vitamins and phenolic compounds with important health benefits. You can enjoy fresh, uncooked fruits by themselves, or you can add them, with a drizzle of honey or maple syrup, to warm oats or plain low-fat yogurt. If you are craving something sweeter or find the seeds hard to chew, consider trying blackberry jams or juice concentrates or adding blackberries into your baked goods. Here are two recipes to get you started.

Fresh Berry Oatmeal (Makes 1 serving)

Recipe and nutrition facts by Maike from “Cheerful Cook”

Ingredients:

- 1 cup almond milk (unsweetened)
- 1/3 cup steel-cut oats
- 2 tablespoons raisins
- 1 tablespoon maple syrup
- 1 teaspoon cinnamon
- 1/2 cup blackberries
- 2 tablespoons pecans



Figure 3: Picture of fresh berry oatmeal. (Photo by Maike from “Cheerful Cook”)

Stovetop Instructions:

1. Bring the almond milk to a boil. Add the steel-cut oats and reduce the heat to a low simmer. Stir occasionally and cook for 10-12 minutes.
2. Add crushed pecans, raisins, cinnamon, and a dash of salt to the simmering oats.
3. Allow the oatmeal to simmer for another 2-3 minutes. Once the oatmeal has reached your desired consistency, transfer it into a bowl.
4. Add fresh berries and drizzle maple syrup on top.

Nutrition Facts

Per serving: 490 calories; 83 g carbohydrate; 12 g protein; 14 g fat (1 g saturated fat); 336 mg sodium; 450 mg potassium; 14 g fiber; 16 g sugar; 155IU vitamin A; 16.7 mg vitamin C; 395 mg calcium; 3.9 mg iron.

Honey Sweetened Oat Whole Wheat Blackberry Muffins (Makes 12 muffins)

Recipe and nutrition facts by Jami from “An Oregon Cottage”

Ingredients:

- 1 1/2 cup whole wheat flour
- 1 cup whole rolled oats
- 2 teaspoons baking powder
- 1 teaspoon cinnamon
- 1/4 teaspoon salt
- 1/4 cup oil (expeller pressed sunflower, melted coconut, or mild olive)
- 1 egg
- 1/3 cup honey
- 3/4 cup milk
- 1 cup fresh berries, plus more for tops, if desired
- optional: sugar-cinnamon sprinkle on tops



Figure 4: Honey-sweetened oat blackberry muffin (Photo by Jami from “An Oregon Cottage”)

Instructions:

1. Heat oven to 400°F and grease a 12-cup muffin tin.
2. Add all dry ingredients to a large bowl.
3. Whisk wet ingredients in a measuring glass.
4. Pour wet ingredients into the dry ingredients and mix slowly with a wooden spoon.
5. Gently fold in 1 cup of blackberries.
6. Bake for 15-18 minutes.

Nutrition Facts

Serving size: 1 Muffin

Per serving: 153 calories; 23 g carbohydrate; 3 g protein; 5.8 g fat (1 g saturated fat); 15 mg cholesterol; 64 mg sodium; 1.5 g fiber; 9.4 g sugar.

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