

Cultivate a Taste for the BLUES



Blueberries are small wonders...



sweet, juicy, colorful and altogether inviting. Whether you enjoy them fresh, frozen, dried or canned, blueberries are high on the list for convenience, versatility and good nutrition.

Add blueberries to cereal, muffins and pancakes to excite even the bleary-eyed at breakfast. Pop blueberries into salads, smoothies and sauces; bake them into desserts; or simply eat them out of hand as a tasty snack. Any time of day, they add sweet flavor, visual appeal and a healthy nutrition boost.

The more you know about blueberries, the better you'll like them!

The BLUES *Go Way Back*



The blueberry is an indigenous North American species with deep roots in our history. By the time the Europeans arrived, our native inhabitants were already enjoying blueberries year round through clever preservation techniques. They were dried in the sun, then added whole to soups, stews and meat; or crushed into a powder and rubbed into meat as a preservative. As the legend goes, Native Americans gave blueberries to the Pilgrims, helping them make it through their first winter.

Blueberries also have a place in the annals of folk medicine. Their roots were brewed into a tea believed to help relax women during childbirth, and blueberry syrup was thought to be a cure for coughs. Another health legend is the association between bilberries, a European cousin of blueberries, and good eyesight. Modern science is just beginning to discover what ancient cultures have long known: Blueberries are good for us in many ways.

Blueberry Cultivation Comes of Age

The blueberry is no youngster; botanists estimate it's been around for more than 13,000 years. However, it wasn't cultivated until the early 20th century. Elizabeth White and Dr. Frederick V. Coville were the first to develop the hybrid for cultivated highbush blueberries by domesticating and improving wild highbush blueberry species. The result is a plump, juicy, sweet and easy-to-pick berry with color ranging from deep purple-blue to blue-black, highlighted by a silvery sheen called a "bloom."

Botanically speaking, the blueberry is part of a family that includes the flowering azalea, mountain laurel and heather—plants that favor acid

soil, plenty of water and a cool climate. Today, there are dozens of commercial highbush varieties thriving across the United States, Canada and South America. Although commercially produced in thirty-five states, six states account for more than 90% of the highbush crop: Michigan, New Jersey, Oregon, North Carolina, Georgia and Washington. British Columbia is the primary highbush blueberry producer in Canada. Chile is the major producer in South America. Lowbush blueberries, used primarily in food processing, are grown in Maine and Eastern Canada.

Harvesting The Blues

Highbush blueberries grow in clusters and don't all ripen at once. The berries at the bottom of the cluster can be ripe while the ones on top are still green.

For the fresh market, blueberries are picked either by hand or with harvesting machines which gently shake each plant so only the ripe berries fall into the catching frame. Most of the machine-harvested blueberries are frozen immediately for use year round.

Fresh highbush blueberries are now available 12 months of the year from producers in North and South America. North American blueberries are available from April through October, with the peak season being mid-June to mid-August. The earliest harvest is in the southern states moving north and into Canada as the season continues. Blueberry season in South America runs from November through March.

Highbush blueberries can also be enjoyed year round as frozen, canned and dried fruit, as well as in processed foods.

Highbush Blueberry Production

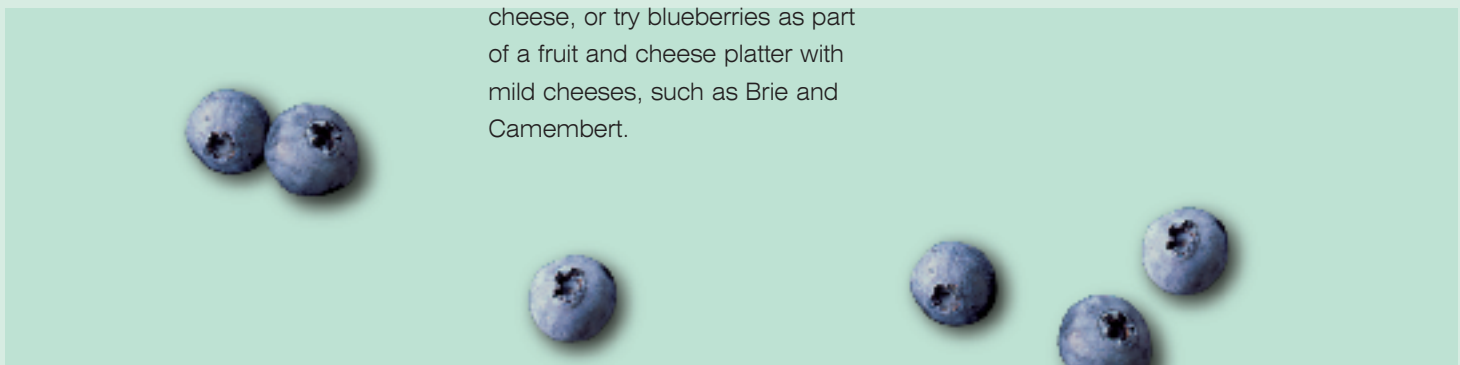
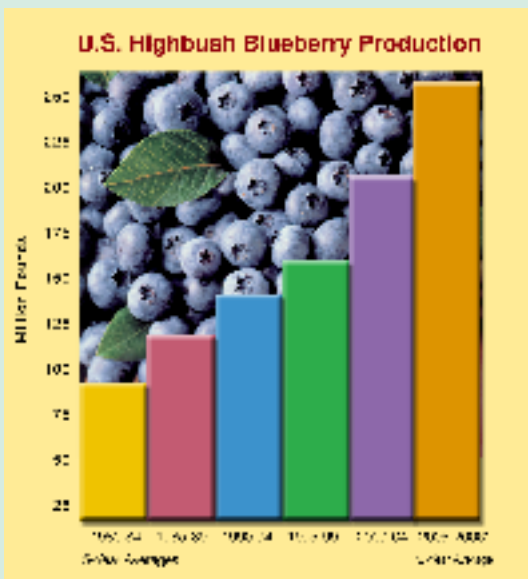
Total production of both lowbush and highbush blueberries in North America reached an estimated 536 million pounds in 2006. Highbush blueberries accounted for 62% of total production. Highbush blueberry production in the United States and Canada has steadily increased over the years, from about 90 million pounds in 1980 to a production level in 2006 of 332 million pounds—269 million pounds in the U.S. and 63 million pounds in Canada. The highbush blueberry industry is growing rapidly in South America as well. Fresh imports from this region jumped 30% in one year, reaching 37 million pounds in 2006—28 million pounds from Chile and 9 million pounds from Argentina.

Today, over half of all highbush blueberries are shipped to the fresh market to keep pace with the ever-increasing demand. The rest are harvested to be frozen, puréed, concentrated, canned or dried for use in a wide range of food products, including yogurt, pastries, muffins, cereals and health bars.

Sweet and Savory Flavor Partners for Blueberries

Blueberries are an amiable berry—getting along well with a diverse crowd of foods and flavors. Though they can't be beat in all things sweet—such as cakes, puddings, muffins and pancakes—don't forget that they're pretty impressive on the savory side, too. Their fresh, fruity flavor teams up perfectly with pork, chicken and game, and they're dynamite in fruit salsas and sauces accented with black and red peppers, thyme and mint. For more heavenly flavor partners, read on:

- Spices love blueberries; try them with cardamom, cinnamon, coriander, ginger and candied ginger, mace, nutmeg and vanilla beans or vanilla extract; also fresh herbs such as cilantro, mint and basil.
- Dairy foods are a natural mate for blueberries—cottage cheese—ice cream, frozen yogurt, sherbet, sour cream, heavy cream, ricotta cheese, or try blueberries as part of a fruit and cheese platter with mild cheeses, such as Brie and Camembert.
- Almost any fruit teams up well with blueberries—apples, apricots, coconut, melons, citrus fruits and all other berries.
- All kinds of nuts go well, especially almonds (don't forget almond paste).
- Liqueurs, such as orange or raspberry, are good companions; also rum or port.
- Try dried blueberries instead of raisins in your next granola mix, oatmeal cookies, or quick breads.
- Use canned blueberries for velvety smooth shakes and smoothies.





Blues for Good Health

Luscious, sweet blueberries are only 80 calories per cup, virtually fat-free and a good source of vitamin C.

In addition, there is mounting scientific evidence that blueberries help promote good health. Here is what we have learned so far:

- In studies at the USDA labs at the Arkansas Children's Nutrition Center, Little Rock, AR, blueberries ranked among the highest in antioxidant activity when compared to more than 100 other foods. (Wu, X et al. J Agric Food Chem. 2004, 5:4026-37.) Antioxidants help to neutralize free radicals, which are unstable molecules linked to the development of a number of diseases, including cancer, cardiovascular disease and other age-related conditions such as Alzheimer's.
- Ongoing research points to a possible relationship between blueberries and healthy brain function. In a study at the USDA Human Nutrition Research Center in Boston, a diet rich in blueberries reversed some loss of balance and coordination and improved short-term memory in aging rats (Joseph, J.A. et al. J Neurosci. 1999, 19:8114-21.) Subsequent studies on mice with Alzheimer's-like symptoms demonstrated that blueberry supplementation caused signal transmission between brain cells to approach normal activity. (Lau, F.C. et al. Neurobiol. Aging 2005, 26S:128-132.) These findings may have important implications for our aging U.S. population.
- Preliminary studies at Rutgers University in New Jersey suggest that antioxidants called proanthocyanidins, which are found in blueberries, can inhibit infection-causing bacteria from adhering to the lining of the urinary tract. (Schmidt, B. M. et al. J Agric Food Chem. 2004, 52:6433-42.)

Just one-half cup of blueberries helps meet the government's recommended goal of 2 cups (4 servings) of fruit a day for adults. Eating a variety of colorful fruits and veggies provides a wide range of valuable nutrients like fiber, vitamins and potassium, helps maintain a healthy weight and may reduce the risk of many diseases.

NUTRIENT CONTENT OF BLUEBERRIES

1 cup (148 grams)

Calories	84 kcal
Protein	1.1 g
Fat	0.5 g
Carbohydrate	21.5 g
Fiber	3.6 g
Vitamin C	14.4 mg
Manganese	0.5 mg

USDA National Nutrient Database for Standard Reference, Release 19 (2006)



For more information
about blueberries
and health,
visit www.blueberry.org.

How to Handle the Blues— Buying and Storage Tips

Fresh Blues

Look for fresh blueberries that are firm, dry, plump, smooth-skinned, with a silvery surface bloom and free from leaves and stems. Size is not an indicator of maturity but color is—berries should be deep purple-blue to blue-black; reddish berries aren't ripe, but may be used in cooking. Avoid soft or shriveled fruit and any signs of mold. Containers with juice stains indicate that the fruit may be bruised.

Refrigerate blueberries as soon as you get them home, in their original plastic pack or in a covered bowl or storage container. Wash the berries just before use. Use within ten days of purchase.

Frozen Blues

Frozen, unsweetened blueberries packed in polybags or boxes can be found in the frozen food section of your supermarket. The frozen berries should feel loose, not clumped together.

Frozen blueberries are individually quick frozen so you can remove as few or as many as needed.

Blueberries should be kept frozen and the unused portion returned to the freezer promptly. If not used immediately, cover and refrigerate thawed berries and use within three days.

Commercially frozen berries are washed before being frozen and do not need to be rinsed again.



How to Freeze Your Own Blueberries

The secret to successful freezing is to use berries that are completely dry before popping them in the freezer. No need to rinse before freezing; simply place berries, still in their original containers, in resealable plastic bags and freeze. Or, if you prefer to rinse the berries first, dry them well with paper towels, transfer to freezer containers or resealable plastic bags and freeze. The berries will freeze individually and you can remove just the portion you need. If not washed prior to freezing, blueberries should be rinsed just before using.

A Proud Culinary Heritage

Blueberries have a cherished role in our culinary traditions, by appearing in some of the most whimsically titled dishes. Blueberry Buckle, for example, is a succulent coffee cake with lots of blueberries and a streusel topping; Blueberry Grunt, so called because this biscuit-covered dessert starts to “grunt” when the skillet is covered; Blueberry Mush, a steamed pudding based on a traditional English Duff; Blueberry Flummery is a contribution of the Shakers, who developed this soft sweet dessert for the toothless elders; and let’s not forget blueberry slumps and shrubs.



Make Sure You’re Getting *the* Honest Blues

Read the ingredient label closely when buying packaged goods that call themselves “blueberry”, such as waffles and pancakes; cereals and cookies; muffin, cake and cookie baking mixes. Some products don’t contain any real blueberries at all, but rather artificially flavored and colored bits, designed to simulate berries.



Blue Batter Blues

Blueberries may change color when cooked. Acids, such as lemon juice and vinegar, cause the pigment in the berries to turn reddish. Blueberries also contain a yellow pigment, which in an alkaline environment, such as a batter with too much baking soda, may give you greenish-blue berries.

To reduce the amount of color streaking, stir blueberries (unthawed, if frozen) into your cake or muffin batter last. For pancakes and waffles, add the blueberries as soon as the batter has been poured on the griddle or waffle iron. This will make the pancakes prettier and they’ll be easier to flip. If frozen blueberries are used, cooking time may have to be increased to be sure the berries are heated through.

Blueberries

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