

Eggplant

Description

Eggplant, or *aubergine* as it is called in France, is a vegetable long prized for its beauty as well as its unique taste and texture. Eggplants belong to the plant family of *Solanaceae*, also commonly known as nightshades, and are kin to the tomato, bell pepper and potato. Eggplants grow in a manner much like tomatoes, hanging from the vines of a plant that grows several feet in height.



Early varieties of eggplant were small and creamy white, hence the name. Today one of the most popular varieties of eggplant in North America looks like a pear-shaped egg. The skin is glossy and deep purple in color, while the flesh is cream colored and spongy in consistency. Contained within the flesh are seeds arranged in a conical pattern.

In addition to this variety, eggplant is also available in a cornucopia of other colors including lavender, jade green, orange, and yellow-white, as well as in sizes and shapes that range from that of a small tomato to a large zucchini.

While the different varieties do vary slightly in taste and texture, one can generally describe the eggplant as having a pleasantly bitter taste and spongy texture. In many recipes, eggplant fulfills the role of being a complementary ingredient that balances the surrounding flavors of the other more pronounced ingredients.

Health Benefits

In addition to featuring a host of vitamins and minerals, eggplant also contains important phytonutrients, many which have antioxidant activity. Phytonutrients contained in eggplant include phenolic compounds, such as caffeic and chlorogenic acid, and flavonoids, such as *nasunin*.

Brain Food

Research on eggplant has focused on an anthocyanin phytonutrient found in eggplant skin called *nasunin*. Nasunin is a potent antioxidant and free radical scavenger that has been shown to protect cell membranes from damage. In animal studies, nasunin has been found to protect the lipids (fats) in brain cell membranes. Cell membranes are almost entirely composed of lipids and are responsible for protecting the cell from free radicals, letting nutrients in and wastes out, and receiving instructions from messenger molecules that tell the cell which activities it should perform.

Rich in Phenolic Antioxidant Compounds

Researchers at the US Agricultural Service in Beltsville, Maryland, have found that eggplants are rich sources of phenolic compounds that function as antioxidants. Plants form such compounds to protect themselves against oxidative stress from exposure to the elements, as well as from infection by bacteria and fungi.

The good news concerning eggplant is that the predominant phenolic compound found in all varieties tested is chlorogenic acid, which is one of the most potent free radical scavengers found in plant tissues. Benefits attributed to chlorogenic acid include antimutagenic (anti-cancer), antimicrobial, anti-LDL (bad cholesterol) and antiviral activities.

ARS researchers studied seven eggplant cultivars grown commercially in the U.S. and a diverse collection of exotic and wild eggplants from other countries. In addition to chlorogenic acid, they found 13 other phenolic acids present at significantly varying levels in the commercial cultivars, although chlorogenic acid was the predominant phenolic compound in all of them. Black Magic—a commercial eggplant cultivar representative of U.S. market types—was found to have nearly three times the amount of antioxidant phenolics as the other eggplant cultivars that were studied. In addition to their nutritive potential, the phenolic acids in eggplant are responsible for some eggplants' bitter taste and the browning that results when their flesh is cut. An enzyme called polyphenol oxidase triggers a phenolic reaction that produces brown pigments. Scientists have begun work on developing eggplant cultivars with an optimal balance of phenolics to ensure both optimal nutritional value and pleasing taste.

Cardiovascular Health and Free Radical Protection

When laboratory animals with high cholesterol were given eggplant juice, their blood cholesterol, the cholesterol in their artery walls and the cholesterol in their aortas (the aorta is the artery that returns blood from the heart back into circulation into the body) was significantly reduced, while the walls of their blood vessels relaxed, improving blood flow. These positive effects were likely due not only to nasunin but also to several other terpene phytonutrients in eggplant.

Nasunin is not only a potent free-radical scavenger, but is also an iron chelator. Although iron is an essential nutrient and is necessary for oxygen transport, normal immune function and collagen synthesis, too much iron is not a good thing. Excess iron increases free radical production and is associated with an increased risk of heart disease and cancer. Menstruating women, who lose iron every month in their menstrual flow, are unlikely to be at risk, but in postmenopausal women and men, iron, which is not easily excreted, can accumulate. By chelating iron, nasunin lessens free radical formation with numerous beneficial results, including protecting blood cholesterol (which is also a type of lipid or fat) from peroxidation; preventing cellular damage that can promote cancer; and lessening free radical damage in joints, which is a primary factor in rheumatoid arthritis.

Tips for Preparing Eggplant

When cutting an eggplant, use a stainless steel knife as carbon steel will react with its phytonutrients and cause it to turn black. Wash the eggplant first and then cut off the ends.

Most eggplants can be eaten either with or without their skin. However, the larger ones and those that are white in color generally have tough skins that may not be palatable. To remove skin, you can peel it before cutting or if you are baking it, you can scoop out the flesh once it is cooked.

To tenderize the flesh's texture and reduce some of its naturally occurring bitter taste, you can sweat the eggplant by salting it. After cutting the eggplant into the desired size and shape, sprinkle it with salt and allow it to rest for about 30 minutes. This process will pull out some of its water content and make it less permeable to absorbing any oil used in cooking.

Rinsing the eggplant after "sweating" will remove most of the salt.

Eggplant can be baked, roasted in the oven, or steamed. If baking it whole, pierce the eggplant several times with a fork to make small holes for the steam to escape. Bake at 350 degrees Fahrenheit (about 177 degrees Celsius) for 15 to 25 minutes, depending upon size. You can test for its readiness by gently inserting a knife or fork to see if it passes through easily.

A Few Quick Serving Ideas

For homemade babaganoush, purée roasted eggplant, garlic, tahini, lemon juice and olive oil. Use it as a dip for vegetables or as a sandwich filling.

Mix cubed baked eggplant with grilled peppers, lentils, onions and garlic and top with balsamic vinaigrette.

Stuff miniature Japanese eggplants with a mixture of feta cheese, pine nuts and roasted peppers.

Add eggplant to your next Indian curry stir-fry.