

Selecting Tomatoes for the Home Garden

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This publication will help home gardeners choose from a variety of tomato cultivars to find what they want.

Tomatoes, *Solanum lycopersicum* (formerly *Lycopersicon esculentum*), are available in a wide range of fruit colors, sizes, shapes, and maturities. Ripe tomatoes may be red, orange, pink, yellow, white, or even green with shapes varying from globe or round to slightly flattened, pear-like, or cherry-sized.

Consumers sometimes complain that tomatoes purchased in grocery stores lack flavor or have tough skin. Although nurseries and garden centers can provide only a limited number of different tomato cultivars, home gardeners willing to grow their own tomato transplants can choose from among hundreds of tomato cultivars, selecting those with the color, texture, size, and taste they prefer. Although rumored, there is no direct link between fruit acidity and color. Yellow tomatoes, which many home gardeners believe have lower acidity, actually have a normal acidity level but also a higher sugar content, which changes the flavor (*Figure 1*).

When discussing tomatoes, the term **cultivar**, a contraction of the terms “cultivated variety,” refers to any group of plants with distinct characteristics that are preserved through controlled propagation, such as hybridization or cuttings. In contrast, the term *variety* refers to a subdivision of a species that evolved without human intervention, often within a distinct geographical area, and will breed true when isolated from other tomatoes. Often the term *variety* is used incorrectly to refer to any distinct tomato type. Almost all tomatoes should be referred to as cultivars, since even heirloom tomatoes were developed through years of human selection for plants with the best characteristics.

Certain tomato cultivars have been developed for special uses such as stuffing (Pink Stuffer, Yellow Stuffer, Striped Cavern) or longer storage (Burpee’s Long Keeper).

Very dwarf cultivars adapted for growth in pots or other containers also are available. Most of these “patio” cultivars



Figure 1. There is no direct link between fruit acidity and color.

have cherry-sized fruit, like Pixie II and Orange Pixie, although a few, like Bush Steak, Patio, and Patio Princess, produce regular-sized fruit.

Tomato Classification, Growth Habits and Pollination

Common tomato classifications include:

- **Standard tomatoes** usually are smooth and round, and are larger in size than salad tomatoes but smaller than beefsteak types. Also called *slicing* or *main season* tomatoes, standard tomatoes are the most common tomato type. This group includes well known cultivars like Better Boy, Celebrity, Early Girl, and Rutgers.
- **Beefsteak tomatoes** have the largest fruits, sometimes weighing up to a pound or more. They have dense flesh and numerous small seed cavities, and often mature late in the growing season. The term *beefsteak* refers to a group of tomatoes with similar fruit characteristics, although there also is a cultivar named Beefsteak. Usually these fruits are globe shaped, but some cultivars have an irregular shape. Common cultivars include

Beefmaster, Big Beef, and heirlooms like Brandywine and Cherokee Purple.

- **Salad tomatoes**, including currant, cherry, grape, and pear types, produce small, bite-sized fruits. These small-fruited varieties develop large, sprawling plants that grow and produce fruits even under hot, dry conditions. Common cultivars include Sun Gold, Super Sweet 100, Large Red Cherry, Red Grape, and Yellow Pear. Currant tomato, *S. pimpinellifolium*, actually is a distinct species, however, it will readily cross with other tomatoes, so keep plants isolated if you plan to save seed.
- **Paste tomatoes** have thick, somewhat dry flesh, with small seed cavities and less locular gel, making them good candidates for processing into sauces and tomato paste. Usually paste tomatoes have an elongated shape. Common cultivars include Roma, San Marzano, and Viva Italia.

Tomatillos, and ground cherries are sometimes confused with tomatoes. These plants belong to the genus *Physalis* rather than the tomato genus *Solanum*.

Home gardeners should carefully consider the amount of space available in their garden when deciding which tomato cultivars to grow. Planting a combination of cultivars with different growth types will result in a long season of fresh tomatoes. The two most common growth forms for tomato plants are *determinate* and *indeterminate*.

- **Determinate** plants, sometimes called *bush tomatoes*, grow only to a set height then stop. Determinate tomato plants range from less than 2 feet to about 3 feet tall. Plants develop short branches, each ending in a flower cluster, and then set fruit. Growth stops at a finite height and terminal flower clusters form at the top. Fruits ripen and are harvested in less than six weeks. Production is limited by the short height of the plant, as growth and branching is restricted. For this reason, determinate tomatoes are ideal for canning or freezing since the majority of the produce can be harvested and processed within a short time frame. Some determinate cultivars provide high early yields before other tomato types begin producing.
- **Indeterminate** tomatoes, often called *vining tomatoes*, grow continuously until killed by frost. Each plant has many branches and suckers, and plants can get quite large. These plants flower and set fruit continuously until the plant dies, resulting in a staggered harvest throughout the growing season.
- **Semi-determinate** plants are intermediate in size between determinate and indeterminate types, producing fewer suckers than indeterminate plants, and usually reach a height of 3 to 5 feet.

- **Dwarf indeterminate** is a new tomato classification, producing very short, bushy plants similar to determinate types, but which keep flowering and producing fruit continuously like indeterminate types. Cultivars include Husky Red Cherry and Husky Gold.

Many tomato cultivars on the market today are *hybrids*. Tomato plants are self-pollinating, however, hybrid seed can be produced through a laborious process involving the hand crossing of two different parent plants. The resulting hybrid seed or progeny display specific characteristics inherited from the parent plants. However, when seed is harvested from the hybrid plants and grown out the following year, it will not grow true to type because of genetic recombination. Therefore, gardeners should not save seed from hybrid plants, with the expectation that the resulting plants will be similar to the hybrid parent.

Increasingly popular today are heirloom tomatoes. The definition of an heirloom tomato varies, but usually refers to open pollinated plants that were in cultivation before 1940, when the first hybrid cultivars became widely available. Often heirlooms have been passed down within families or communities for many years, with seed selected from the best plants each year. All heirlooms are *open pollinated*. Open pollinated plants, when isolated from other tomatoes, will grow true to type each year and their seed can be saved with the expectation of the same plant and fruit quality each year.

Most new tomato cultivars are resistant to or tolerant of certain diseases. This usually is indicated by a letter following the name, such as “N” for nematodes, “F” for Fusarium race 1, “FF” for Fusarium race 1 and 2, “FFF” for Fusarium race 1, 2 and 3, “T” for tobacco mosaic virus, and “V” for Verticillium wilt. Cucumber mosaic virus (CMV) and tomato spotted wilt virus (TSWV), Alternaria stem canker (ASC), gray leaf spot (St), and Septoria leaf spot (L) indicate additional disease resistance. Realize that not all tomato cultivars have the same level of resistance, and even resistant plants can become infected if disease pressure is very high. Some plants are labeled as tolerant to certain diseases indicating that they will produce fruit of acceptable quality even with moderate to high levels of disease infection.

Although open-pollinated heirloom cultivars are now popular, many have little genetic resistance to common diseases. These older cultivars should be planted in ground that has not had any Solanaceous crops (tomato, pepper, eggplant, or potato) for at least three years and in a place with good air circulation to reduce the opportunity for fungal infection.

All-American Selections (AAS) are cultivars tested at trial gardens across the United States. Cultivars must be unique, widely adapted, and provide a quality product to receive this honored award.

Early season tomatoes require 65 or fewer days from transplanting to harvest; main season tomatoes 70 to 79 days; and late season tomatoes more than 80 days.

<i>Type</i>	<i>Cultivar Name</i>	<i>Plant Habit</i>	<i>Disease Resistance</i>	<i>Harvest</i>	<i>Comments</i>
Cherry	Jolly	I		Main	70-75 days, hybrid, AAS, 1 ½ oz. peach-shaped pink fruits
	Husky Red Cherry	DI	V, F, ASC	Early	65-70 days, hybrid, ½ oz. fruit, small plants produce throughout the season
	Large Red Cherry	I		Main	75 days, open pollinated, 1 oz. deep red fruits
	Pixie II	D		Early	52 days, 2 oz. fruits, dwarf compact plants
	Orange Pixie	D		Early	52 days, hybrid, 4 oz. yellow-orange fruits, meaty with excellent flavor, plants 18' tall
	Red Grape	SD		Early	60 days, open pollinated, ½ oz. fruit in large clusters, crack resistant
	Sugary	SD		Early	60 days, hybrid, AAS, grape-like clusters, very sweet fruits, good for containers
	Sungold (Sun Gold)	I	F, T	Early	57-60 days, hybrid, golden-orange fruits, crack resistant
	Super Sweet 100	I	V, F	Main	70-78 days, hybrid, ½ oz. fruit, improved Sweet 100, crack prone
	Sweet Million	I	V, FF, N, T	Early	60-70 days, hybrid, improved Sweet 100, ½-¾ oz. dark red fruit on tall vigorous plants, crack resistant
Pear	Red Pear	I		Main	70-75 days, open pollinated, ½ oz. fruits, resists cracking, good flavor
	Yellow Pear	I		Main	70-80 days, open pollinated, 1 oz. fruits, crack prone, average flavor
Plum	Juliet	I		Early	60-62 days, hybrid, AAS, 1 ½-2 oz., elongated and slightly flattened red fruits, crack resistant
Paste	Amish Paste	I		Main	74 days, open pollinated, 8 oz. ox heart-shaped paste tomato, great flavor
	Macero II	D	V, F, ASC	Main	76 days, hybrid, red, thick-walled, pear-shaped fruit
	Roma VF	D	V, F, ASC	Main	75-80 days, open pollinated, 2 oz. fruits, thick flesh fruits
	San Marzano	I		Early-Late	60-80 days, open pollinated, 3 oz. deep red fruits, meaty and dry, crack resistant
	Viva Italia	D	V, F, N	Main	72-80 days, hybrid, 3 oz. fruits set well in hot weather
Standard	Better Boy	I	V, FF, N, ASC	Main	72-80 days, hybrid, deep red, 1 lb. globe-shaped fruit, crack resistant
	Bush Celebrity	D	V, FF, N, T, ASC, St	Main	67 days, hybrid, AAS, 7-10 oz. fruits, good flavor, 15' compact plants, very disease resistant
	Bush Early Girl	D	V, FF, N, T	Early	65 days, hybrid, 18 inch plants, 6-7 oz. fruits
	Bush Steak	D		Early	65 days, hybrid, 8-12 oz. red fruits, dwarf 2-foot plants for containers
	Celebrity	SD	V, FF, N, T, ASC	Main	70-75 days, hybrid, 7-10 oz. red fruits, good flavor, very disease resistant
	Early Girl	I	V, FF	Early	57-63 days, hybrid, 4-6 oz. slightly flattened, crimson fruits
	Floramerica	D	V, FF, N, T, ASC, St	Main	70 days, hybrid, AAS, bright scarlet 10-12 oz. fruits, sets fruit well in hot weather
	Floralina	D	V, FFF, ASC, St	Main	78 days, hybrid, 8-10 oz. red fruits, good flavor
	Health Kick	D	V, FF, ASC, St	Main	72 days, hybrid, 4 oz. plum-shaped fruits high lycopene content, strong disease resistance
	Husky Gold	DI	V, F, ASC	Main	70 days, hybrid, AAS, 5-7 oz. bright golden fruits
	Jubilee (Golden Jubilee)	I		Late	80 days, open pollinated, AAS, 8 oz. orange, globe-shaped fruits

<i>Type</i>	<i>Cultivar Name</i>	<i>Plant Habit</i>	<i>Disease Resistance</i>	<i>Harvest</i>	<i>Comments</i>
Standard <i>(continued)</i>	Mountain Pride	D	V, FF	Main	74-77 days, hybrid, 7-10 oz. fruits with good flavor, very crack resistant
	Mountain Spring	D	V, FF	Early	65 days, hybrid, 9 oz. firm, globe-shaped fruits, very resistant to cracking and blossom end rot
	Patio	D	F	Early	50-70 days, hybrid, 4 oz. firm red fruits, 2-foot compact plants are great for container growing
	Patio Princess	D		Early	65-68 days, hybrid, 4-5 oz. red fruits, developed for container plantings
	Quick Pick	I	V, F, N, T, ASC	Main	79 days, 4 oz. red fruits, good disease resistance
	Rutgers	I	F, ASC, St	Main	75 days, open pollinated, 5-8 oz. red fruits, good flavor, heavily used as a processing tomato by Campbell's Soup
	Rutgers Improved (Rutgers VFA)	D	V, F, ASC, St	Main	72 days, 6 oz. dark red meaty fruits, good flavor
	Sun Leaper	D	V, FF	Early	69-72 days, hybrid, 9 oz. slightly flattened fruits with good flavor, sets fruit well in hot weather
	Sunmaster	D	V, FF, ASC, St	Main	72 days, hybrid, 7-8 oz. fruits, good flavor, sets fruit best in hot weather
	Beefsteak	Beefmaster	I	V, F, N	Late
Big Beef		I	V, FF, N, T, ASC, St	Main	70-75 days, hybrid, AAS, 8-12 oz. fruits, crack resistant
Brandywine		I		Late	80-90 days, open pollinated, 10-24 oz. red-pink fruits, great flavor
Caspian Pink		I		Late	85 days, open pollinated, 10-12 oz. red-pink fruits, good for cool climates
Cherokee Purple		I		Late	85 days, open pollinated, 8-12 oz. dark red fruits, soft texture
Nebraska Wedding		D		Late	85-90 days, open pollinated, 10 oz. deep orange fruits, crack resistant
Specialty	Yellow Stuffer (Gourmet Yellow Stuffer)	I		Late	80-85 days, open pollinated, 4 oz. yellow, elongated fruits, nearly hollow except for a small cluster of seeds
	Burpee's Long Keeper	I		Main	78-85 days, open pollinated, 6-7 oz. orange-red fruits, bred for storage quality
	Striped Cavern	I		Main	80 days, open pollinated, bell pepper-like 8 oz. red fruits with gold stripes, hollow inside except for a small cluster of seeds, good for stuffing

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