

# Fruit Cultivars for Home Plantings

Success in growing fruits in home plantings largely depends on the type or cultivar selected. Midwestern growing conditions — cold winters; frosty or rainy springs; hot, dry summers — make it difficult to grow some of the well-known fruits. Every gardener should be realistic and discriminating about what fruits to plant. Many problems with winter injury, diseases and insects can be avoided by choosing a fruit cultivar that is well adapted to your site conditions.

## Adaptability

Performance of fruiting plants depends in part on how well their growth requirements are met. All fruits require full sun and adequate spacing for optimal crop production without shading. Also, fruit plants almost always require irrigation during July and August. For raspberries, plant growth is often limited by intense summer heat. In contrast, blackberries can be injured by low winter temperatures. In spring, buds on nearly all fruit trees are susceptible to frost. Thus, low areas or “frost pockets” should be avoided, as cold air settles in these sites. Rainfall near cherry harvest frequently causes fruit cracking.

Nearly all Missouri soils are low in phosphorus and may require adjustment of the soil pH before planting. Most fruits perform well at 6.0 to 6.5 pH, but blueberries require acidic soils at 4.8 to 5.2 pH. Thus, a soil test taken before the planting season is recommended. Although some plant nutrients can be added annually, others such as phosphorus or sulphur are best incorporated into the soil before planting to minimize root disturbance and enhance nutrient uptake after planting.

## How much to plant

Beginners tend to plant more fruits than they need or want. A few trees or plants will provide a family with needed fresh and preserved fruits if given proper care.

## Obtaining plants

Many fruit cultivars are protected by plant patents. Thus, these cultivars must be obtained from a nursery. Grafted fruit trees, especially those with a dwarfing rootstock,

**Table 1. Expected yields of fruits for mature producing plants that are given proper care.**

Fruit unit	Potential yield (pounds)
Apple, per dwarf tree	50 to 150
Nectarine, per tree	125 to 200
Peach, per tree	150 to 250
Pear, per tree	400 to 650
Plum, per tree	40 to 120
Sour cherry, per tree	40 to 120
Blackberry, per 50 foot row	60 to 100
Blueberry, per plant	5 to 15
Currant, per plant	5 to 10
Elderberry, per plant	25 to 35
Gooseberry, per plant	4 to 7
Grape, per vine	10 to 20
Raspberry, per 50 foot row	45 to 75
Strawberry, per 50 foot row	30 to 65

**Note:** Higher figures represent the more productive cultivars in their most productive mature years, grown on adequate sites with proper care.

produce a crop at a younger age. Semidwarf fruit trees are often crowded in small spaces and become difficult to prune and harvest. Most fruit trees grown from seed produce differently from their parents in fruit type and quality.

Small fruit plants produced from tissue culture or cuttings purchased from reputable nurseries are desirable, as they should be disease-free. Plant material supplied from existing plantings (by cuttings or division) may perpetuate disease problems.

## Dwarf fruits

Nurseries choose specific dwarfing rootstocks that are best suited to the aboveground growth of the cultivar. For apples, rootstock choice is usually limited to dwarfing or semidwarfing types. Because dwarf trees produce heavy crops at a young age, they require support to prevent the aboveground part of the tree from breaking. Use an 8- to 10-foot post buried 2 feet into the ground for support. Tie the main trunk or central leader of the tree to the post using pliable material to prevent tree girdling.

Dwarf pear rootstocks are unavailable for planting in Missouri.

Peach, plum, cherry and apricot trees are naturally smaller than apple at maturity. Although dwarf trees are available for the stone fruit, they are often problematic.

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## Pollination needs

Requirements for pollination vary among kinds of fruits. The majority of apple, pear, sweet cherry, plum, blueberry, black currant and elderberry cultivars require cross-pollination. Two different cultivars that bloom at the same time can be used for cross-pollination. Tart cherry, European (blue) plum, peach, nectarine, apricot (with a few exceptions), grape, raspberry, blackberry, strawberry, gooseberry and red currant cultivars will bear acceptable crops with self-pollination. Thus, several cultivars of self-pollinating crops are not needed unless prolonged summer harvest of fruit is desired.

## Thinning and natural fruit drop

With any woody perennial fruit plant, development of a strong vegetative structure before fruiting is important. Thus, during the first growing season and the following year, remove all flowers or fruits from the tree or bush. This practice is critical for apples, pears, peach, plum, cherry, grape and blueberry. In the third growing season, allow the plant to produce a light crop. Thereafter, adjust the crop annually to balance fruit and foliar growth.

Flowers and fruits naturally thin themselves at specific times. Unpollinated flowers often drop in the spring. Small, immature fruits drop naturally early in the growing season. Fruits that are diseased, infested with insects, or moisture-stressed also often drop prematurely. Even so, most trees produce an abundant crop of small fruits at harvest. Thus, to increase fruit size at harvest, ensure a crop for next year and prevent limb breakage, thin developing fruits (less than ½ inch diameter) annually after the danger of frost has passed. For apples, remove all fruits in a cluster, leaving only the largest one. For peaches, thin fruits to one every 8 inches along the branches. Preferably remove small, misshapen or damaged fruit. Other types of fruit trees require thinning only when a heavy crop is produced. Thinning by hand is desirable to selectively remove fruit, but when hand-thinning becomes impractical, fruit can be knocked off with a rubber hose. The crop load on grapevines is generally adjusted during pruning, leaving enough buds to prevent overcropping.

## Pests and diseases

All fruits are susceptible to insect pests and disease organisms. Often, apples, peaches and grapes are productive only under the careful use of a regular spray program. Spraying at specific times throughout the growing season is necessary because many pests attack different fruits multiple times. Protection of the foliage and bark is also necessary to maintain healthy and productive plants.

Certain fruit cultivars are susceptible to problems that cannot be prevented by cultural practices or spraying. For this reason, some well-known cultivars are omitted from

the following list. For example, cultivars of pear such as Bartlett, Comice and Anjou are very susceptible to fire blight and not recommended over more tolerant cultivars.

Birds often damage cherries, blueberries and elderberries. Although cumbersome to handle, netting is available to exclude these pests from plants.

## Cultivars

The following cultivars are suggested on the basis of vigor, productivity, climatic adaptability, fruit quality and relative freedom from the most destructive diseases. Wherever practical, several cultivars of each kind of fruit are listed to help satisfy personal preferences.

### Apples

**Liberty.** Immune to apple scab and cedar apple rust. Resistant to fire blight and powdery mildew. Red with yellow background color, medium-size fruit with a tart flavor. A good general-purpose apple for eating fresh, cooking or processing. Matures in early September.

**September Wonder Fuji.** Large fruit with a red blush. Very sweet with firm flesh. Excellent quality for eating fresh. Ripens in mid-September.

**Enterprise.** Immune to apple scab, resistant to cedar apple rust and mildew. Moderately resistant to powdery mildew. Medium-size to large fruit, red with yellow undercolor. Mild, sub-acid, spicy flavored fruit. Ripens in early October.

**Arkansas Black.** Dark red, medium-size fruit. Fruit is very firm, keeps well and has a spicy, tart flavor. Ripens in late October.

### Pears

Several European and Asian pears are susceptible to fire blight. This bacterial disease often kills blossoms, shoots, branches and young trees of susceptible cultivars. Only fire blight-resistant cultivars are recommended for planting in Missouri, and they require a second cultivar for cross-pollination. Some Asian pears have a thin peel and are very susceptible to disease infection after hail. For optimal fruit quality, pears should be picked while firm and green and ripened indoors for several days at about 70 degrees F.

**Harrow Delight.** Medium-size fruit is yellow and smooth, resembling Bartlett. Matures in early August.

**Seckel.** Small, yellow fruit with red blush. Very sweet and productive. Matures in mid- to late August.

**Honeysweet.** Yellow fruit, larger than Seckel but with a similar flavor. For best production, cross-pollinate with Starking Delicious. Matures in late August.

**Starking Delicious.** Medium-size, yellow fruit with white flesh. Good all-around quality. Matures in early September.

**Olympic (Korean) Giant.** Very large, round Asian pear with russeted surface. Has very crunchy texture.

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### Tips for success as a family fruit grower

- Plant only two or three kinds of fruits that are easily produced and harvested.
  - Select the most disease-resistant cultivars to minimize the amount of spraying, especially if you decide to grow fruit trees.
  - If you cannot spray, plant fruits that are most likely to bear some edible fruits without spraying: blackberry, gooseberry or blueberry.
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## Peaches

The major factors in selecting peaches for home use are cold hardiness, disease resistance and season of ripening. After severe winters, oozing cankers may form on lower portions of the trunks and severely injure or kill trees. Spring frosts may eliminate fruit for a growing season. Plant peach trees on high ground and in well-drained soils only.

**Flamin' Fury PF-1.** Good resistance to bacterial spot. Small with yellow flesh. Semifreestone with few split pits. A very early peach, picked in mid- to late June.

**Redhaven.** Moderately resistant to bacterial spot. Excellent winter hardiness and fair frost tolerance. Freestone with soft, yellow flesh. To maintain medium-size peaches, aggressive fruit thinning is needed. Ripens in mid-July.

**Blazing Star.** Medium-size fruit with yellow flesh and freestone. Fruit is softer than Redhaven and ripens a few days later.

**Contender.** Very resistant to bacterial spot. Good winter hardiness. Red peel with juicy, yellow flesh and freestone. Ripens in August.

**TangOs.** Excellent resistance to bacterial spot. Good winter hardiness. Flat, doughnut-shaped fruit with yellow peel and yellow flesh. Harvest after Redhaven in mid- to late July.

**Blushingstar.** Good resistance to bacterial spot. Medium-size fruit with white flesh and freestone. A late-ripening peach harvested in mid-August.

## Nectarines

Nectarine trees are almost identical to peach trees in appearance, growth habit and cold hardiness. Fruits are smooth and are smaller and more difficult to grow than peaches. They are generally more susceptible than peaches to low temperature damage and bacterial spot. Their flesh is firm, and they must be quite ripe to be freestone. Not all nectarines have been adequately evaluated under Missouri growing conditions. Performance will vary by area.

**Flamin' Fury PF-11.** Some resistance to bacterial spot and brown rot. Medium-size with yellow flesh. Requires aggressive thinning. Ripens in early July.

**Emeraude.** Good resistance to bacterial spot. Large fruit, white-fleshed with low acid flavor. Harvest in mid-July.

**Fantasia.** Moderate tolerance to bacterial spot. Medium-size to large, freestone fruit with yellow flesh. Ripens in mid-August.

**Stark Ovation.** Moderate tolerance to bacterial spot. Medium-size fruit with yellow flesh and low acid flavor. Harvest after Fantasia in late August.

## Apricots

Apricots are, unfortunately, the first fruit trees to bloom in the spring. Frequently, fruit buds or blossoms are killed by low temperatures. In central Missouri, apricot trees crop in two of seven years of production. The glossy foliage makes a nice ornamental tree, however, and a crop of fruit is considered a bonus.

**Goldcot.** Fruit is medium-size with a smooth gold skin and firm, orange flesh. Ripens in early July.

**Wilson Delicious.** Fruit peel is red-spotted and red blush with a yellowish-orange background color. Flesh is salmon-orange and freestone. Matures in early July.

**Harglow.** Some resistance to bacterial spot and perennial canker. Fruit is smaller than Wilson Delicious. Peel is bright orange with speckled blush. Flesh is freestone. Tree has compact growth habit. Ripens in mid- to late July.

## Plums

In Missouri, European plum trees generally bloom later and crop more reliably than Japanese plum trees. Japanese cultivars require cross-pollination, and their flowers are more susceptible to low temperature injury than other types. Thus, Japanese plum trees perform slightly better in the warmer, southern part of the state.

### European

**Earliblue.** Earliest of the prune-type plums. Small fruit. Ripens in early August.

**Stanley.** No. 1 prune-type plum with gold-colored, freestone flesh. Tree is self-fruitful but cross-pollination improves fruit set. Matures in mid-August.

**Damson.** A small, blue plum with a tart flavor, good for jams and jellies. Ripens in mid-August.

### Japanese

**Shiro.** Medium-size, round, yellow fruit. Pollinate with a red plum such as Ozark Premier or Redheart. Ripens in mid-July.

**Ozark Premier.** Disease tolerance is slightly better than that of other Japanese plums. Thick-skinned, bright red fruit with yellow, clingstone flesh. Pollinate with Shiro plum. Ripens in early August.

**Redheart.** Semi-freestone fruit with greenish-red peel and red flesh. Cross pollinate with Shiro or Ozark Premier. Ripens in early August.

## Sour cherries

Sour cherries are reasonably well adapted to Missouri but should be planted only on soils that drain quickly after rainfall. During humid or rainy conditions, brown rot is problematic. Sour cherries are more tolerant of low temperature injury than sweet cherries. Trees are self-pollinating.

**Montmorency.** Bright red, medium-size fruit. Excellent for pies. Heavy bearing and vigorous-growing tree. Ripens in mid- to late-June.

**North Star.** A natural dwarf tree with upright growth habit, about half the height of Montmorency trees. Light red fruit that turns deep red as it matures on the tree. Ripens in early June and continues for about 14 days.

**Balaton.** Bears large fruit and has large pits. Crop size enhanced with cross-pollination from other sour cherry cultivars. Harvest in early July.

## Sweet cherries

Sweet cherries are marginal fruit trees for Missouri. They must have a well-drained soil. The best soils in Missouri are the river hill (loessal) soils. River hill soils also provide the best spring frost protection by draining cold air away from the trees. Sweet cherries usually bloom early enough to be damaged by spring frosts or freezes unless they are planted on excellent sites. Most sweet cherries need cross-pollination for fruit set (with the exception of the self-pollinating types listed below), so two or more different cultivars must be planted. Fruit tends to crack when rainfall occurs near harvest, and brown rot is often problematic.

### Self-pollinating types

**Stella.** Large, heart-shaped fruit, moderately susceptible to cracking. Skin and flesh are dark red. Hardiness questionable north of Interstate 44. Ripens in June.

**Blackgold.** Late-blooming tree that produces dark red fruit. Cherries are purportedly crack-resistant. Harvest in mid-June.

**Starkrimson.** Excellent quality large fruit with red skin and flesh. Tree height about 12 to 14 feet. Ripens after Blackgold.

### Cross-pollinating types

**Royalton.** Large, dark reddish-purple fruit. Cross-pollinate with Van, Gold, Stella or other sweet cherry types.

**Emperor Francis.** Medium-size fruit with yellow skin and red blush. Use fresh or for jams or for brining as maraschinos. Cross-pollinate with Stella or Hedelfingen.

**Gold.** Small, firm, yellow fruit. Purportedly bird-resistant. Can be pollinated by most other sweet cherry cultivars. Harvest in mid-June.

## Grapes

### Table grapes with seeds

**Fredonia.** Susceptible to downy mildew. Similar to Concord with slip-skin fruit, but berries are larger. Multiuse grape with “foxy” flavor. Ripen in early September.

**Concord.** Very susceptible to black rot. Vines are cold-hardy. Large blue grapes with medium-size to large bunches. Fruit ripens unevenly during warm weather. An old-time favorite slip-skin grape used fresh or for juice and jelly. Harvest in mid-September.

**Niagara.** Susceptible to black rot. Vigorous-growing vines. Large white berries with thick slip-skin in loose clusters. Used fresh, or for juice and wine with a foxy flavor. Harvest in September.

**Catawba.** Vines susceptible to black rot and downy mildew. Medium-size, coppery red berries. Used fresh, or as sweet juice, blush wine with foxy character and jellies. Ripens two weeks after Concord.

### Wine grapes

**Seyval.** Black rot and powdery mildew susceptible. A midseason-maturing French-American hybrid with white berries on medium-size clusters. Used to make high-quality white wine. Vines are only moderately hardy but have medium vigor and are highly productive. Cluster thinning is needed in most years.

**Vidal Blanc.** A late French-American hybrid with long, narrow clusters. Berries small and golden with characteristic “freckle spots.” Vines are vigorous and productive.

**Norton (Cynthiana).** Tends to be slightly less susceptible to diseases. Very cold-hardy, native grape species (mostly *Vitus aestivalis*) used for high-quality dry red wine. Blue-black berries. Vines may exhibit sulphur-sensitivity when sprayed. Matures late-season.

### Seedless grapes

**Glenora.** Small, black berries on medium clusters. Flesh firm (not slip-skin) and very sweet. Vine medium in vigor. Ripens in mid-August.

**Reliance.** Susceptible to black rot and anthracnose. Small to medium-size, pink slip-skin berries on medium-size clusters. Fruit is very sweet with mild foxy flavor. Susceptible to fruit cracking when rainfall occurs near harvest. Vines are productive, vigorous and relatively hardy. Ripens in August.

**Mars.** Disease-susceptible under humid, wet growing conditions. Medium-size, dark blue slip-skin berries in small, loose clusters. Strong foxy flavor. Vines slightly less cold-hardy than Reliance. Ripens about five days after Reliance.

**Neptune.** Susceptible to fungal diseases. Yellow-green fruit without slip-skin and foxy character. Berries are sweeter than Mars. Harvested at the same time as Mars.

## Strawberries

Strawberries are easily established, but fungal diseases and rainfall during harvest are problematic. Weed control is a major task when growing strawberries. Everbearing or day-neutral cultivars fail to produce a good crop in warm Missouri temperatures.

### Early

**Earliglow.** Shows some resistance to gray mold, verticillium wilt and red stele diseases, but susceptible to powdery mildew and leaf spot. Small berries with excellent flavor. Yield tends to decrease as season progresses. Berries are dark red, sweet and good for freezing.

### Midseason

**Surecrop.** Resistant to leaf scorch, leaf spot, verticillium wilt and red stele. Medium-size berries, light colored, tart and fair quality. Plants are vigorous and productive.

**Honeoye.** Not resistant to leaf spot. Berries are very large and have good red color throughout the fruit. Under certain conditions, not as flavorful as other cultivars. Plants produce a heavy crop when grown on raised bed.

**Redchief.** Resistant to red stele and verticillium wilt. Berries are medium-large to large, dark colored, sweet and good quality. A good plant producer. Excellent for freezing.

### Late midseason

**Allstar.** Resistant to red-stele and verticillium wilt, but susceptible to gray mold. Berries are large, glossy and orange-red color, and tend to be soft.

**Jewel.** Susceptible to foliar diseases. Large, wedge-shaped, firm berries of excellent color and quality. Plants have moderately vigorous runner production. Very good for eating fresh or for freezing.

## Blackberries

Native blackberries are prevalent throughout Missouri but generally have small, seedy fruit. Sterility is problematic and may be transmitted to non-native cultivars. Infected plants bloom profusely, but no fruit sets. Plants infected with sterility should be removed — roots and tops — and burned. Plant only disease-free plants in another location. Because semierect and trailing blackberries are more susceptible to low temperature injury than erect-growing types, they are not recommended for planting north of Interstate 44. Erect-growing cultivars do not require trellising.

### Thorned

**Darrow.** Berries small to medium-size. The hardiest of all blackberries. Ripens late June to early July.

**Shawnee.** Large, shiny black, high-quality berries that can be harvested over a four-week period. Less hardy than Darrow but can tolerate temperatures to -9 degrees F. Canes may die back after a cold winter, resulting in crop loss, but fruit is generally produced the following year.

Note: Primocane (fall) fruiting cultivars such as Prime-Ark, Prime-Jim and Prime-Jan suffer from severe summer heat stress and perform poorly in Missouri.

### Thornless

**Arapaho.** Fruit is less sweet than Navaho but has better flavor than Shawnee. Berries have small seeds. Canes not as vigorous growing as other cultivars. Plants are hardy to -11 degrees F. Ripens in early July

**Apache.** Very large, sweet fruit with good quality. Plants produce many canes Ripens 10 days later than Arapaho.

**Ouachita.** Small but very sweet berries. Canes are very erect with high productivity. Harvest between Arapaho and Navaho.

**Navaho.** Fruit is medium-size, glossy and black, and stores well. Excellent sweet flavor. Canes are hardy to -13 degrees F. Matures in mid-July.

## Raspberries

All raspberries require well-drained soil to avoid root rot, and plants often suffer from summer heat stress. Black raspberries are susceptible to anthracnose and cane blight. Purple raspberries generally have larger fruit than black cultivars. Black and purple raspberries grow more vigorously and require more pruning than red-fruited cultivars. To maximize a single harvest of large fruit, prune all canes of fall-fruiting or primocane-fruiting red raspberries just above the soil surface during the dormant season.

**Jewel.** Resistant to anthracnose fungus and more disease-resistant than many black raspberries. Plants are cold-hardy and productive under good care. Black, medium-size firm fruit with good flavor. Ripens in midseason.

**Royalty.** Very susceptible to root rot. Produces large purple fruit. More productive than red raspberry cultivars. Matures in June.

**Latham.** Red, medium-size, firm fruit of good quality. Good preserved or frozen. Ripens in June.

**Heritage.** Bears a fall crop of red fruit. Fruit good for fresh uses or for preserving. Ripens in August.

## Blueberries

Blueberries require an acid soil (pH 4.8 to 5.2). Before planting, incorporate sulphur to lower the soil pH, if necessary, and incorporate peat moss into the planting hole. After planting, use ammonium sulfate fertilizer to maintain a low pH. Use an organic mulch over the row, and irrigate routinely during dry periods. Use netting over a structure to enclose plants and prevent fruit loss from birds.

**Duke.** Fruit is mild-flavored, medium-size with very firm skin. Best for eating fresh. Berries have long stems and loose clusters. Ripens very early (in mid-June).

**Blueray.** Berries are large and light blue and have good flavor. Good all-purpose berry. Bushes are vigorous and productive. Ripens in late June to early July.

**Bluecrop.** Large fruit (about 65 berries per cup) with bright blue color and good flavor. Good all-purpose berry. Very productive. Fruit ripens a few days later than Blueray.

## **Gooseberries**

The gooseberry, though not especially popular, is worth considering because of the small amount of care and space required. Plants are adapted to a wide range of soils. Improved cultivars such as Welcome, Pixwell and Invicta produce berries twice the size of most native plants. Gooseberries are used mostly for pies.

## **Currants**

Currants generally prefer a cooler growing region than Missouri but will produce a crop most years. Black currant cultivars, including Blackdown, Consort and Crusader, require cross-pollination. Red Lake and Cherry Red

currants are self-fertile, but under hot, humid conditions, fruit will drop. Currants are used for beverages, jams and jellies.

## **Elderberries**

Large cymes (multibranched fruit clusters) are harvested from shrubs in July and August when all berries are fully colored. Missouri cultivars include Wyldwood and Bob Gordon, but others such as Adams, York and Scotia are available. Yields are improved with cross-pollination. Bacterial leaf spot, borers, mites and sting bugs may be problematic. Elderberries are used fresh in pies and beverages, frozen or dried.

### **ALSO FROM MU EXTENSION PUBLICATIONS**

- G6000 *Pruning Raspberries, Blackberries, Gooseberries, Currants and Elderberries*
- G6001 *Pollinating Fruit Crops*
- G6010 *Fruit Spray Schedules for the Homeowner*
- G6020 *Fire Blight*
- G6021 *Home Fruit Production: Apples*
- G6022 *Apple Cultivars and Their Uses*
- G6024 *The Vertical Axis System: A Training Method for Growing Apple Trees*
- G6026 *Disease-Resistant Apple Cultivars*
- G6030 *Home Fruit Production: Peach and Nectarine Culture*
- G6085 *Home Fruit Production: Grape Culture*
- G6090 *Home Fruit Production: Grape Training Systems*
- G6135 *Home Fruit Production: Strawberry Cultivars and Their Culture*

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