

Tree Fruit Cultivar Recommendations for Arkansas

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The commercial success of a fruit orchard is dependent on the selection of cultivars that will perform reliably for the selected location and site and meet market demands. When selecting cultivars for your orchard, growers should consider the following elements.

Climatic Adaptability of the Cultivars

The selected cultivars need to be adapted to the climatic conditions for the geographic location. Pay close attention to the information given by the nursery catalogs and other information such as USDA winter hardiness zones and chilling requirements. Arkansas has four hardiness zones (7a-8b). If the orchard is located in a colder area of the state (USDA hardiness zones 7a), select cultivars that have high chilling hour requirements (1,000-1,200 chill hours). If you are in the southern part of the state, then select fruit cultivars with lower chilling hour requirements (700-900).

Time of Bloom and Days to Harvest

You can select an assortment of early-, mid- and late-season ripening cultivars to extend or concentrate the season to match the time constraints and specific market demands. However, care must be taken to make sure not to select cultivars that bloom too early, especially in crops such as peaches, where danger of frost damage



to the blooms can be a problem. Select late-blooming cultivars when possible. For fruits that require cross-pollination, such as apples and pears, the time of bloom of cross-pollinating cultivars must coincide in order to have cross-pollination among the cultivars.

Pest Resistance

Insects and pests are manageable challenges for tree fruit production in Arkansas and this must be considered. Growing fruits requires high inputs of horticultural and pest management. The first step to reduce the amount of time and effort is to buy cultivars that have low susceptibility to disease and insect pests prevalent in your area.

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For example, in Arkansas, bacterial spot (*Xanthomonas arbuticola* pv. *pruni*) is a serious disease that affects leaves, twigs and fruit of peaches and nectarines. The disease can prematurely defoliate a tree, causing weakness and eventually death if not treated. It is prevalent in areas with hot, humid climates. Peach cultivars bred in areas where the climate is not conducive to the development of bacterial spot are usually not tested for resistance to this disease. If you buy cultivars that have been developed in an area where this disease is not a problem, e.g., California, there is a high probability that the peach will be susceptible to this disease unless otherwise stated in the nursery catalog. Buying trees that have pest resistance does not mean you will not have to spray your trees at all. It only means you will decrease the number of sprays needed. Disease resistant cultivars are available for most tree fruits, however, most tree fruits have very limited insect resistance.

Selecting a Nursery

The investment you will be making in buying plants requires careful consideration. Plant quality from the nursery has an impact on the lifelong productivity of the planting. Ask other growers for suggestions on where to buy your plants. They can give you positive or negative comments about a nursery. Remember that bargain or low-priced plants of poor quality will be more costly in the long run.

Apricots and Cherries

Given the climate in Arkansas, both apricots and cherries trees can be grown but will not reliably set fruit. Both crops tend to bloom early and be exposed to frost or freeze damage during bloom. In the case of cherries, heavy rainfall common in our region during fruit ripening will result in fruit splitting prior to harvest.



Rootstocks

Tree fruit rootstock selection is critical for optimum fruit production. Rootstocks offer benefits such as size control, soil adaptability and soil disease resistance and can help growers know the approximate tree height, that a particular tree will reach ranging from dwarf, semi dwarf, to full-sized trees. The tree size also relates to the required training system and any need for tree support or trellising.

When it comes to selecting rootstocks, the grower must consider both the desired tree size and its resistance to soil-borne pests and diseases. There is also the consideration of the soil type that the trees will be grown in, and the rootstock's potential impact on fruit production and nutrient uptake. **There are many rootstocks for apples and peaches, the following list is not exhaustive of all those that are available. However those with a (*) following the selection have been observed to be successful in Arkansas on-farm and to have some disease resistance.**

Rootstock	Size	Characteristics
Apples		
Bud 9 (B9)	35-40% of standard (6-9')	Very early precocity, good winter hardiness, good fire blight resistance, little suckering, requires support.
Malling 9 (M9)	30-35% of standard (6-10')	Primary dwarfing rootstock worldwide, is very precocious and has high-yield efficiency. Very susceptible to fire blight and woolly apple aphid. Requires trellising or support.
Geneva 41 (G41)*	30-40% of standard (6-10')	Good replant site performance, and highly resistant to fire blight, with high-yield efficiency and few root suckers.
Geneva 935 (G 935)*	40-50% of standard (8-12')	Good replant site performance, fire blight resistant, very precocious, very productive.
Malling 7 EMLA (M 7 EMLA)	60-70% of standard (12-15')	Historically widely planted, but little disease resistance for much of the SE. Well adapted to many soils. Produces suckers.
Malling Merton 111 EMLA (M.M. 111 EMLA)	85-100% of standard (15-18')	Support is not needed, moderate winter hardiness, moderate suckering. Resistant to woolly apple aphid and is quite tolerant to fire blight. Once widely used in full size orchards.

Rootstock	Size	Characteristics
Peaches		
Guardian*	Standard + 10%	Good resistance to root knot and ring nematode, and to peach tree short life (PTSL). Recommended on old orchard sites.
Halford	Standard	Cold hardy, some resistance to PTSL, but no root knot nematode resistance.
Lovell	Standard	Cold hardy, some tolerance of wet sites. No nematode resistance.
Nemaguard*	Standard – 10%	Resistant to root knot nematode. Good choice for sandy soils. Susceptible to PTSL. Less cold hardy than Lovell and Halford.
MP-29*	Semi-dwarf	Resistance to Armillaria root rot (ARR), peach tree short life (PTSL) and root-knot nematodes. Best used in sites with high armillaria pressure. Limited availability in the nursery trade.

Fruit	Cultivar	Notes
Apples		
<i>Apples will generally be more successful in the northern part of Arkansas. Fungicide sprays and selection of disease resistant varieties will ensure the best success. Fire blight and cedar apple rust will be key diseases of apples in Arkansas.</i>		
Early (July - Aug)	William's Pride	Maroon-red, medium to large, dessert apple with crisp-like flavor. Trees are annually productive and easy to grow. Resistant to apple scab, cedar apple rust, fire blight, powdery mildew. A summer apple that does not store well.
	Pristine	A yellow, dessert apple. Tree has a tendency toward biennial bearing. Resistant to scab and powdery mildew, moderately resistant to fire blight and cedar apple rust. A summer apple that does not store well.
	Gala	Golden color with red stripes, medium size, crisp texture, highly susceptible to cedar apple rust and to fire blight, stores well for 30 days in common refrigeration.
Mid (Sept)	Suncrisp	Yellow, medium to large, firm, crisp, rich fruit. Used for cooking and desserts. High yield and precocious tree. Resistant to cedar apple rust. Susceptible to fire blight. Stores well for 30 to 60 days in common refrigeration.
	Red Delicious	Red, large, mild flavor, dessert apple. Standard older cultivar. Susceptible to apple scab, but good resistance to fire blight and cedar apple rust. Good storage for 30 to 60 days in common refrigeration.
	Golden Delicious	Yellow, large apple. Mild and juicy flavor. Used for cooking and as dessert apple. Susceptible to cedar apple rust, powdery mildew and apple scab. Good storage for 30 to 60 days in common refrigeration.
	Jonagold	Crimson red stippled with yellow-gold, large size, can be eaten fresh or used for baking. Susceptible to, cedar-apple and rust fire blight, store well if kept cool. A cross between 'Golden Delicious' and 'Jonathan'.
	Crimson Crisp	Deep crimson, large apple with sweet/tart flavor. Highly susceptible to cedar apple rust but some resistance to fire blight, stores well.
Late (Oct)	Enterprise	Red, medium to large apple with spicy full flavor. Best disease resistance available and stores well.
	Fuji	Bi-colored, pink blush to yellow-green with orange/red striped skin, medium size, highly susceptible to cedar apple rust and fire blight has good shelf life in cold storage.
	Arkansas Black	Heritage apple. Red, medium-size fruit. Arkansas favorite. Hard, distinctive flavor. Used for cooking and fresh consumption. Susceptible to apple scab and fire blight. Good storage. Must be held for many months after harvest to soften, can be held through January.
	Gold Rush	Yellow, medium-size, very firm, crisp, unique flavor, dessert apple. Disease resistant to scab, powdery mildew and fire blight. High susceptibility to cedar apple rust.
	Liberty	Dark red large fruit with sweet-tart and crisp flesh. Very resistant to cedar apple rust and moderately resistant to fire blight, stores well.
	Pink lady	Pink blush on yellow background skin at maturity with firm texture. Susceptible to cedar apple rust and fire blight. All-purpose for fresh eating, and baking. Stores well.
	SunCrisp®	Golden yellow, with orange-red blush. Similar taste to Golden Delicious with a little more spice. Resistant to scab but somewhat susceptible to cedar apple rust and very susceptible fire blight.

Fruit	Cultivar	Notes
Pears		
Common Pears	Ayers (Ayres)	Released by the Univ of TN in 1954. Some confusion exists in the nursery trade regarding this variety. A variety called 'Ayer' released in Kansas is a separate variety. Fruits are juicy and sweet, ripen early, moderately resistant to fire blight, used fresh or in canning.
	Comice	Greenish-yellow fruit. Large, broad-based, finely textured flesh. Excellent dessert, but not canning. Large, vigorous tree. Good fire blight resistance. Low chill: 600 chilling hours.
	Harrow Delight	Red blush over yellow background, medium-size fruit. Flesh is high quality with very low grit cells. Attractive, Hardy, productive tree with high resistance to Fire Blight.
	Kieffer	Yellow-golden, large and long fruit. Coarse texture. Good for canning. Fruit is picked while still hard and stored in a cool place. Can be self-fruitful. Hard, vigorous tree. High resistance to Fire Blight.
	Magness	Greenish-yellow, medium-size fruit with a red blush. Smooth flesh. Good for fresh eating, but not canning. Stores well. Does not produce good pollen. High fire blight resistance.
	Maxine	Golden, Large, Bartlett type. Firm fruit with very low grit cells. Good for fresh eating, canning and preserves. Tree highly productive, upright habit. High fire blight resistance.
	Moonglow	Dull yellow fruit. Medium-large A Comice seedling. Excellent for fresh juice or canning; stores well. High resistance to fire blight. Requires 700 chilling hours.
	Orient	Fruits are firm, trees are large, vigorous, and productive. Fruit can be used for canning or cooking. Good fire blight resistance. Released by University of Tennessee. 350-400 chilling hours. Can be self-fruitful. An oriental – European hybrid.
	Seckel	Russeted color, commonly called Sugar Pear. Not very attractive looking due to its russet skin, but great flavor. Smooth flesh. Excellent dessert pear. Self-fertile, but benefits from cross-pollination. Some fire blight resistance.
Asian Pears	Chojuro	Yellow/Green- color russeted skin with medium to large sized fruit. Unique butterscotch flavor. Tree is medium size, and can be self-fruitful, fruit set improved with cross-pollination. Some resistance to fire blight.
	Hosui	Golden-brown russet color, medium to large sized fruit, with a juicy, tangy flavor and crisp flesh. Tree is moderately vigorous and slightly spreading. Some resistance to fire blight.
	Shinsesiki	Yellow and round, medium to large sized fruit which is firm and can be stored up to three months. Can be self-fruitful. Moderate resistance to fire blight.
	20th Century (Nijisseiki)	Yellow, round, medium sized fruit if thinned properly. Can store for a long period of time. Can be self-fruitful. Moderate resistance to fire blight.
Peaches		
<i>Selection of peach varieties with over 1,000 hours of chilling requirement will result in more regular success with setting a peach crop in Arkansas in central and northern Arkansas. Varieties with a chill requirement of less than 750 hours should be avoided in Arkansas due to the high likelihood for frost injury during bloom. Peaches are prone to several leaf, root and fruit diseases, including brown rot, bacterial spot, Armillaria root rot (ARR), peach tree short life (PTSL) and nematodes. Choose a rootstock based on disease pressure at your location. A fungicide spray schedule will be necessary for optimum fruit quality. The University of Arkansas Fruit Breeding program has released several white peach varieties (*) that are well adapted to the state.</i>		
	Whitewater*	White flesh, medium to large size, freestone, and slow-melting texture. Low acid and attractive and flavorful fruit. Early season. Whitewater is the earliest ripening peach cultivar from the UA breeding program. 800 estimated chilling hours, moderate resistance to bacterial spot, stores well. 41 days before Elberta.
	Souvenirs*	Yellow flesh, medium to large size fruit, freestone and slow-melting, 800 estimated chilling hours, low acid flavor, little to no incidence of bacterial spot, excellent storage potential. 31 days before Elberta.
	Redhaven	Yellow, small- to medium-size fruit, semi-freestone. 800-900 chilling hours, medium crop potential. Resistant to bacterial spot. 28 days before Elberta.
	Intrepid	Yellow flesh, good fruit size, freestone, 1000 chilling hours. Late blooming, highly resistant to bacterial spot. 17 days before Elberta.
	White County*	White flesh, freestone and slow-melting. Low-acid flavor, distinct exceptional white peach flavor; sweet with an average of 14% soluble solids. Very productive, mid-season 800 estimated chilling hours. Bacterial spot occasionally seen on the leaves, but no economic damage on fruit. 14 days before Elberta.

* Denotes University of Arkansas release.

Fruit	Cultivar	Notes
Peaches (cont.)		
	Scarletprince	Yellow flesh and deep red skin color. Large fruit size and freestone with firm texture and slow-melting. 850 chilling. Moderately resistant to bacterial spot disease. 13 days before Elberta.
	Red globe	Yellow flesh and red skin color. Large fruit size, and freestone with firm texture. 850 chilling. 13 days before Elberta. Sometimes listed as 'Redglobe' in the nursery trade.
	Loring	Yellow flesh, large fruit, freestone, melting. 750 chilling hours so is frost prone. If evades frost can be a good cropper. Moderate resistance to bacterial spot. 12 days before Elberta.
	White River*	White flesh, large-fruited, freestone, melting flesh. Red blush over 60%-80% of skin with cream-like ground color; very attractive. Very productive, high-quality, mid-late season, 800 estimated chilling hours. High resistance to bacterial spot and only very seldom seen on leaves; one of the more resistant peaches in the Arkansas breeding program. 10 days before Elberta.
	Contender	Yellow flesh, good-size fruit, freestone and melting, non-browning flesh. More than 900 chilling hours. Hardy. Late bloomer, resistant to bacterial spot. 9 days before Elberta.
	Julyprince	Yellow flesh and yellow skin with red blush. Large fruit size and freestone with firm texture and slow-melting. 850 chilling. Moderately resistant to bacterial spot disease. 8 days before Elberta.
	White Rock*	White flesh, freestone, melting flesh. Low acid, very firm, non-melting flesh that remains firm when fully mature to overmature. Early maturing. 800 estimated chilling hours. Moderate resistance to bacterial spot, spots occasionally seen on leaves but no economic damage on fruits. Stores well. 5 days before Elberta.
	Cresthaven	Yellow flesh. Large fruit size, freestone, and melting flesh. More than 900 chilling hours. Very good cropping potential, and resistant to bacterial spot. 3 days before Elberta.
	White Diamond*	White flesh, medium to large size, freestone, and slow-melting. Low acid, very sweet taste and firm flesh. Late season. 800 estimated chilling hours. Little to no incidence of bacterial spot. With Elberta in season.
	Carolina Gold	Yellow flesh, large fruit size, freestone, excellent quality. 1050 chilling hours. Ripens a few days after Contender. Moderately resistant to bacterial spot. Released by NC State University. 4 days after Elberta.
	Flameprince	Yellow flesh, medium to large size fruit, freestone, and melting. 750-900 chilling hours, moderately resistant to bacterial spot. Recommended in NC, SC and GA. 12 days after Elberta.
Nectarines		
<i>Nectarines will face similar issues as Peaches with spring frosts, and diseases. The University of Arkansas Fruit Breeding program has released several nectarine varieties(*) that are well adapted to the state.</i>		
	Arrington*	Yellow fleshed. Medium-size fruit, non-melting flesh, clingstone. Resistant to bacterial spot, and this disease has seldom been observed on fruits. Early ripening. 44 days before Elberta.
	Ozark Mango*	Yellow-orange fleshed medium-large size fruit, clingstone, non-melting flesh. Standard acid level and exceptional flavor with distinct tropical aromatics. Mid-season, ripens with Bradley. Estimated 600-800 chilling hours. Tailored for growers in the SE or Mid-South of the US. Moderate resistance to bacterial spot. 30 days before Elberta. Typically harvested around July 1 in Clarksville AR.
	Bradley*	Yellow fleshed, non-melting flesh, cling. Resistant to bacterial spot. Bradley is the largest fruited of the Arkansas releases thus far. Its flavor is not as fully "nectarine" as the others but is considered good. It has very firm fruit and should handle well after harvest compared to many melting-flesh nectarines. 30 days before Elberta.
	Bowden*	White-fleshed. Large fruit size, clingstone and mid-season. Standard acidity, a sibling of Amore Sweet, little to no incidence of bacterial spot. 25 days before Elberta.
	Amore Sweet*	Yellow-fleshed clingstone. Medium size fruit. Distinct low acidity, firm and non-melting flesh. Little to no incidence of bacterial spot, a sibling of Bowden, stores well. 24 days before Elberta.
	Effie*	White-fleshed medium-large size fruit, clingstone and non-melting flesh. Medium acidity, excellent white nectarine flavor. Latest ripening nectarine released by UA program, ripening about a week after 'Amore Sweet' and 'Bowden' and 2 weeks after 'Bradley. Considered a mid-season nectarine. Little to no incidence of bacterial spot. Named in honor of Mrs. Effie Gilmore, who made major contributions to the UA fruit breeding program during her 32 years of service on the staff of the Fruit Research Station (FRS), Clarksville, AR. 17 days before Elberta.

* Denotes University of Arkansas release.

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FSA6129-PD-12-2024R

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