W 895-D

# Selecting Apples and Pears for Residential Production in Tennessee

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Apples and pears are some of the most familiar and commonly grown fruits for the residential grower. However, before diving into tree fruits, it is best to consider the overall goal of your planting and how much time and energy you are willing to commit. For some, production of large quantities of fruit for consumption or preservation is important, while others are satisfied with lower production and lower management time. Keep in mind tree fruits are more space and time consumptive than small fruits, so they may not be best for those with space limitations or those who prefer low-maintenance crops. Even for a casual backyard tree or two, proper pruning, cultural practices, and pest and disease management are crucial to harvest high quality fruit.

## Selecting the Best Site

Apple and pear trees require deep, well-drained soils and full sun sites for good production and health. Planting sites should also be carefully tailored to the mature size of the tree. Standard trees (grown on non-dwarfing rootstocks) can be up to 30 feet tall. They need to be planted 30-40 feet apart. The use of dwarfing rootstocks (see below) can reduce this spacing considerably by reducing the size of the mature tree but may require more support due to less vigorous root systems. Generally, irrigation is not required, but it is important to have access to water for tree establishment and drought situations. More detailed site selection considerations are discussed in other UT Extension publications.

## Selecting Apple and Pear Cultivars for Tennessee Climates

Many tree fruits can be successfully grown in Tennessee if proper care is taken in crop and cultivar selection and management. Apples (*Malus domestica*) and pears (*Pyrus* species) are in the same family and are often together called pome fruits. European pears (*Pyrus communis*) have a traditional shape and texture while Asian pears (*Pyrus pyrifolia*) have crisp flesh and a more apple-like shape. Apples, and to a lesser extent pears, are likely to be more productive over time than the more challenging crops of peaches and sweet cherries. However, many diseases and pests can damage and reduce fruit harvests or even kill apple and pear trees in Tennessee. Selecting cultivars with resistance to the most common diseases is important to enable successful fruit production and harvests. Resistance is often used in conjunction with carefully managed spray programs to prevent or reduce the impact of pests and diseases. Disease and pest tolerant cultivars are a key asset, but don't assume that resistance will enable fruit trees to perform well with little to no management. Cultural management including cultivar selection, site selection, pruning, training, pest and disease control, and sanitation are crucial.

In selecting crops and cultivars, it is also important to be familiar with grafted trees. Most apple and pear trees are sold as grafted trees. Grafting is attaching a shoot piece from a tree with the desired fruit (scion) to another

tree's root system (rootstock). Once the vascular systems grow together, the resulting tree has the desirable shoot attributes of the scion and root attributes of the rootstock. Desirable rootstocks may be resistant to diseases or pests, tolerate a wider range of conditions, or control growth (dwarf or semi-dwarf). Dwarfing rootstocks can reduce mature tree size by up to 60-70 percent. Earlier bearing of fruit (called precocity) is also common with several rootstocks. Most rootstocks are vegetatively propagated (clonal), but trees grown from seed (referred to as standards) can be used as rootstocks if specific attributes are not required.

**Table 1.** Essential terms and concepts and comparison of different attributes of apple and pear trees in home fruit production.

| | **Apples** | **Asian Pear** | **European Pear** |
|---|---|---|---|
| **Chilling requirement:**<br>Chilling refers to the time needed within a specific temperature range (typically between 32-45 F) for a perennial plant to reach winter dormancy requirements. After chilling hours are reached, warm temperatures can induce spring growth. Low-chill cultivars are can break dormancy too early and suffer damage due to spring frosts. Specific chilling hour limitations of cultivars are below. | Most apples are 600-1,000 chill hours, but some cultivars with 400-600 chill hours are used. Very low chill apples (<200 hrs.) are not suitable for Tennessee. | Many cultivars suitable for Tennessee have chilling hours in the 300-500 range. | Many cultivars suitable for Tennessee have chilling hours in the 300-600 range. |
| **Cross pollination requirement:**<br>Many types of fruit require (or benefit from) the movement of pollen from one cultivar to another. In pome fruits, pollination is performed by insects. | Cross pollination is required during the same bloom window. Some trees with sterile pollen will not pollinate other trees. | Two or more cultivars of Asian pears with the same or overlapping bloom periods are needed for optimum pollination. | Some are self-fruitful, some require a pollenizer, some benefit from a pollenzer, and some are sterile. See cultivar notes. |
| **Grafting and rootstock use:**<br>Rootstocks are used for tree-size reduction. Many of these less vigorous rootstocks require more support. Rootstocks also provide resistance to some diseases like fireblight and collar rot, insect pests like wooly apple aphids, and replant issues (issues with trees planted in a previous orchard location). Rootstocks have a direct impact on fruit quality through their differences in mineral absorption. Some rootstocks provide tolerance to soil conditions. | Dwarf, semi-dwarf, and a range of disease and pest resistances are available in different rootstocks. | Rootstock can be used for fireblight resistance (a fireblight resistant rootstock does not confer fireblight resistance to the scion) or tolerance to site conditions. Rootstock use can differ between Asian and European cultivars. | Rootstocks are commonly used for tree-size control, to provide some disease resistance, as well as adaptability to various soil conditions. |
| **Tree characteristics (growth, bearing capacity):** | Growth managed by rootstock, as well as through spur (small shoots on branches bearing fruit and producing a more compact growth habit) or non-spur fruiting habit. | Typically, a smaller tree than European pears. | Typically, upright growth habit and size can be managed by semi-dwarfing rootstocks. |
| **Fruit characteristics:** | Wide range of color, texture and taste. Temperature as well as mineral nutrition can impact fruit coloration. | Round fruit tending to be crisper than European pears. Ripens on the tree like apples. | Traditional pear shape and texture when ripe, although texture can vary by cultivar. Often harvested prior to full ripeness. |
| **Disease resistance:**<br>Disease-resistant cultivars aid in management and potential for success in pome fruits, but cultural and chemical management are still needed. | Some diseases reduce fruit yield or quality (scab, rusts, powdery mildew, black rot, bitter rot), while others damage or even kill the tree (fireblight). | Fireblight is the biggest concern, and resistant and/or tolerant cultivars are available. | Fireblight is the biggest concern, and resistant and/or cultivars are available. |

## Apple Cultivars for Tennessee

Green shading represents disease resistant cultivars which may reduce disease issues or enable fewer sprays and lead to a higher opportunity for success. Yellow shading represents cultivars with more disease susceptibility, while red shading represents cultivars with disease suceptibility or cultural needs that will often lead to poor success in residential production in Tennessee. These colors should be interpreted as general guidelines as all cultivars have not been trialed in Tennessee. Most apples require cross-pollination, so multiple cultivars should be in bloom at near the same time to enable cross pollination. If a cultivar with sterile pollen is selected, then a third cultivar (or appropriate crabapple) will be needed in the planting.

| NAME | CULTIVAR DESCRIPTION (SORTED BY HARVEST SEASON) | DISEASE RESISTANCE* | HARVEST TIMING/ BLOOM GROUP** |
|---|---|---|---|
| | *Standard/modern apple cultivars* | | |
| **Redfree** | Modern disease resistant apple released in the 1980s. Summer apple that is near the earliest of disease-resistant options with crisp texture and some storability. Red fruit has a mild and low acid flavor. Ripens over several weeks so will require multiple pickings. | Scab-R, Fireblight-MR Rusts-VR, Powdery-MR | Early/3 |
| **William's Pride** | Modern disease resistant cultivar bred in the 1970s with good climatic range and deep red fruit with crisp flesh and good flavor. Early to fruit but with a long bloom period that can still bear through late frosts and be a good pollenizer. Wide picking window. | Scab-VR, Fireblight-R Rusts-VR, Powdery-R | Early/2 |
| **Mollie's Delicious** | This apple is red blushed over a yellow base. It is actually related to Golden Delicious and not Red Delicious with lower chill hour (500) requirements for moderate climates. Versatile fruit used for fresh eating and/or cooking with flavor, sweetness and storage potential. Bloom time is later and it is a good pollinizer. | Scab-S, Fireblight-S Rusts-VR, Powdery-S | Early/5 |
| **Pristine** | This modern, disease resistant apple is an early yellow option primarly for fresh eating. It has moderate vigor and needs fruit thinning for annual bearing. Fruit is bright yellow with orange blush and flesh is crisp and balanced. Drops easily, doesn't store well. | Scab-VR, Fireblight-S to R Rusts-S, Powdery-R | Early/4 |
| **CrimsonCrisp** | This medium apple has flesh that is crisp with a tart aspect. Fruit colors to a deep red under good conditions and stores well. Like many of the other disease resistant cultivars listed, this cultivar came from the Purdue, Rutgers, Illinois University breeding collaboration known as PRI. | Scab-VR, Fireblight-MR Rusts-S, Powdery-MR | Early-Mid/3 |
| **Empire** | A cross between Red Delicious and MacIntosh released in the 1960s. It is a vigoruous tree that bears dark red fruit with white flesh that is slightly tart. Good for fresh eating, cider, cooking and storage. Sets many fruit, which often need thinning to maintain fruit size. | Scab-VS, Fireblight-R Rusts-R, Powdery-S | Early-Mid/3 |
| **Liberty** | Modern disease resistant cultivar that has McIntosh parentage released in the late 1970s. Has a sweet-tart flavor with crisp texture, so often eaten fresh but also used for processing. Should be picked promptly for best flavor and texture. | Scab-VR, Fireblight-R Rusts-S to R, Powdery-R | Mid/2 |
| **Gala** | Popular sweet apple in the marketplace from New Zealand. It can be challenging to grow in home gardens due to poor overall disease resistance. It is relatively low chill (550 hours). | Scab-VS, Fireblight-VS Rusts-R-S, Powdery-MS | Mid/3 |
| **Galarina** | This is a recent European introduction that is a hardier and more disease resistant offspring of Gala. The tree is vigorous and productive, and the not overly large fruit is crisp and sweet with good storage potential and a long harvest window. | Scab-VR, Fireblight-VR Powdery-VR | Mid/3 |
| **Pixie Crunch** | A small fruit that has very good flavor. Good texture and a sweet and spicy flavor that is great for fresh eating. Not an overly vigorous tree and careful pruning is needed to prevent alternate bearing. | Scab-R, Fireblight-R Rusts-S, Powdery-S | Mid/4 |
| **Freedom** | Modern disease resistant apple bred in New York and released in the 1980s that has some Golden Delicious, Rome and Macintosh in its line. The tree is vigorous and early to bear. The fruit is firm and crisp with multiple uses from fresh eating, baking or sauce. | Scab-VR, Fireblight-VR Rusts-R, Powdery-R | Mid-Late/3 |

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| **Golden Delicious** | Most well-known yellow-fruited apple discovered in West Virginia in the early 1900s. Commonly used for breeding, and many other cultivars listed have it in their ancestory. The fruit is good for sauce, pies and fresh eating. Good pollenizer for most other cultivars. Suceptible to bitter rot and other diseases. | Scab-S, Fireblight-S<br>Rusts-S, Powdery-VS | Mid-Late/4 |
| **Honeycrisp** | Challenging cultivar to grow, even commercially. Has high winter hardiness due to its Minnesota breeding but is not an overly vigorous tree. Large, juicy and crisp fruit have become a favorite with many. However, it is a challenge to manage from a nutritional and disease perspective with bitter pit and bitter rot issues. | Scab-MR, Fireblight-R<br>Rusts-S, Powdery-S | Mid-Late/4 |
| **Jonagold** | An apple bred by Cornell with Golden Delicious and Jonathan parents with both sweet and sharp flavors. Used for fresh eating as well as cider. Can be picked over several weeks. It does not pollinate others well because of sterile pollen. | Scab-S, Fireblight-VS<br>Rusts-R, Powdery-S | Mid-Late/4*** |
| **Red Delicious** | Very well-known apple that has lost favor with many eaters over the years. May be appreciated in the home orchard for its heavy bearing. Discovered in Iowa in the late 1800s, it was also known as Hawkeye before being rebranded to market with Golden Delicious. | Scab-S, Fireblight-R<br>Rusts-VR, Powdery-MR | Mid-Late/3 |
| **Enterprise** | Modern disease resistant apple released in the 1990s with good storage life and crispness along with a fully red and thick peel. It has crisp flesh and can be eaten fresh or used for cooking. The tree is vigorous and productive. | Scab-VR, Fireblight-R<br>Rusts-R, Powdery-S | Late/4 |
| **Fuji** | Developed in Japan and released in the 1960s, it actually has Red Delicious as a parent. Sweet apple with very little tartness often grown for fresh eating. Needs a long growing season. Does not always color well in southern regions. | Scab-S, Fireblight-VS<br>Rusts-R to VS, Powdery-R | Late/3 |
| **GoldRush** | Modern disease resistant apple released in the 1990s. Has some Golden Delicious parentage with a sweet, crisp fruit with flavor often described as spicy. Good storing apple with high sugar levels for fresh-eating, cooking or cider. Sets heavily, so should be thinned. | Scab-VR, Fireblight-MR<br>Rusts-S, Powdery-S | Late/4 |
| **Granny Smith** | Well known for its vibrant green color and tart taste that are in part due to it often being harvested before fully ripe. Its discovery dates back to 1868 from Australia. Has good storage potential and is often used for pies and cooking because it holds its shape well. Partially self-fertile and good pollenizer. | Scab-S, Fireblight-VS<br>Rusts-R, Powdery-VS | Late/3 |
| **Crispin (Mutsu)** | Versatile large to very large yellow apple that are dried, baked, cooked for sauce or eaten fresh. It was developed in Japan and is a vigorous, large tree that should be thinned. Relatively low chill hours (500-600). Sterile pollen. | Scab-VS, Fireblight-VS<br>Rusts-S, Powdery-S | Late/3*** |
| **Nova Spy** | This is a disease resistant apple with Northern Spy and Golden Delicious parentage. It is a precocious bearer that is hardy and only moderately vigorous. The fruit are large and red with a crisp, juicy texture that store well and are often used for processing. | Scab-R, Fireblight-VR<br>Rusts-S, Powdery-MR | Late/3 |
| **Pink Lady (Cripps Pink)** | Modern apple released in the 1990s from Australia. Low winter chill cultivar (around 400 hours) that does well in hot summer climates. Elongated fruit with golden skin that is overlain with pink. Fruit has mostly sweet flavor and is a fresh eating favorite. Quality is closely managed in commercial sectors. Scab and fireblight susceptibility are limitations. | Scab-VS, Fireblight-VS<br>Rusts-R, Powdery-R | Late/3 |
| **Sundance** | An apple that is pale yellow in color with a pink blush and some russeting. It was released in 2004 by the PRI collaborative and has good disease resistance along with a crisp, firm texture that has a long ripening season and good storage. Moderate 500 chill hours. | Scab-R, Fireblight-VR<br>Rusts-VR, Powdery-R | Late/4 |

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| **Topaz (Crimson Topaz)** | This is a relatively recent introduction from Europe with good disease resistance. It has a crisp, juicy and sweet-tart flavor that some compare with Honeycrisp. The fruit is a yellow underneath with pretty dark red and orange overlaying. | Scab-R, Powdery-R | Late/3 |
| **Winecrisp** | A late season, disease resistant selection with beautiful deep red to purple fruit. The fruit has a firm, crisp texture with a complex flavor and good storage potential. Trees are early bearing but not overly vigorous so may need thinning to keep bearing every year. | Scab-R, Fireblight-R Rusts-S, Powdery-R | Late/3 |
| | ***Regional/heritage apple cultivars*** | | |
| **Yellow Transparent** | Old variety of Russian origin imported by the USDA in 1870 with good cold hardiness. Smallish fruit ripens very early. Tree is vigorous, precocious and productive. Can be eaten fresh but the tart, smooth flesh is primarily used for cooking and sauce. Does not store well. Susceptibility to fireblight can be a limitation. | Scab-MR, Fireblight-VS Rusts-MR, Powdery-MR | Very Early/2 |
| **Ashmead's Kernel** | An old (1700s), rusted, traditional English apple with an intense flavor that has an interesting sugar and acid balance. Commonly eaten as a dessert apple, but can be stored, cooked, and is increasingly used in craft cider. Sterlie pollen. | Scab-MR, Fireblight-MR Rusts-R, Powdery-R | Mid-Late/4*** |
| **Jonathan** | Classic late 1800s apple with good flavor and storing quality. A relatively small tree that has flowers that are self-fertile. It has poor disease resistance for our area with high susceptibility to fireblight. | Scab-S, Fireblight-VS Rusts-S, Powdery-VS | Mid-Late/3 |
| **Arkansas Black** | A well-known heirloom apple that also has good disease resistance. It was found in the 1870s near Bentonville, Arkansa, and thought to have Winesap parentage. Very firm fruit with a dark red to black color that is used for fresh eating, cider and cooking. Storing apple that can last for months in the proper conditions. Sterile pollen. | Scab-S, Fireblight- VR, Rusts-VR | Late/3*** |
| **Grimes Golden** | Sweet and slightly spicy flavored russeted yellow fruit used for fresh eating, cooking and cider. Thought to have originated in Appalachia in the early 1800s and is credited with being a Golden Delicious parent (often described as having richer flavor). Should be thinned but has a long bloom time and can be both self-fertile and a good pollenizer. | Scab-R, Fireblight-R to S Rusts-R Powdery-MR | Mid-Late/2 |
| **Hardy Cumberland** | Heirloom cultivar that dates back to the early 1900s. Reported to be of Tennessee origin and well suited for southern regions with some scab resistance. Performs well under fluctuating temperatures. Medium sized firm fruit with good crispness, flavor and storage. | Scab-R | Late/4 |
| **Rome Beauty** | This is an heirloom apple associated with Johnny Appleseed lore. Large, dark red apples are used for fresh eating, baking and sauce. Broad disease suceptability can lead to challenges. | Scab-VS, Fireblight-VS Rusts-VS, Powdery-VS | Late/4 |
| **Winesap** | Reliable and adaptable heirloom apple likely from pre-1800. The crisp, dense fruit has a tart flavor good for cooking and cider. Attractive pink bloom but sterile pollen. Parent of Stayman Winesap, Arkansas Black and Blacktwig. | Scab-VS, Fireblight-S Rusts-R, Powdery-R | Late/3*** |
| **Wolf River** | Large apple with dry flesh that used primarily for drying, baking and sauce. Vigorous tree that can be slow to bear. Cold hardy cultivar traced to a WI in the mid-1800s and thought to be of Russian origin. | Scab-R, Fireblight-MS, Rusts-MR, Powdery-R | Late/4 |

| *Rootstock selection for residential apple trees in Tennessee* |
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| G41- 70-75% dwarfing, early bearing, resistant to collar rot, fireblight and wooly apple aphids; tolerant of replant issues; needs support and irrigation |
| M9- 65-70% dwarfing, early bearing and good production; resistant to collar rot; susceptible to fireblight and wooly apple aphids; needs support and irrigation |
| Bud 9- 65-70% dwarfing, similarities to M9 (with less susceptibility to fireblight) |
| G11- 65-70% dwarfing, early bearing; resistant to collar rot and fireblight; needs support and irrigation |
| M26- 55-60% dwarfing, early bearing; susceptible to collar rot, fireblight and wooly apple aphids; needs support and irrigation |
| G210-60% dwarfing, resistant to collar rot, fireblight and wooly apple aphids, free standing trees |
| G969-50-60% dwarfing, early bearing, resistant to collar rot, fireblight, wooly apple aphid and replant with low suckering and burr knots. |
| G935- 60% dwarfing, early bearing, good anchorage, resistant to fireblight, collar rot, replant with low suckering and burr knots. |
| M.111 (EMLA)-15-20% dwarfing rootstock, doesn't require support, resistant to collar rot and wooly apple aphids, withstands drought and performs well across light to heavy soils |
| M.106-40% dwarfing; doesn't require support, widely compatible, precocious; susceptible to root rot and collar rot, does not tolerate poor drainage, does not sucker, moderately tolerant to wooly apple aphids, moderately tolerant to fireblight |
| M.7 and M.7 EMLA – 50% dwarfing, widely compatible, susceptible to root rot and crown rot, good tolerance to fireblight, suckers profusely, shallow root system, prone to tipping on heavier soild and windy sites – requires support. |
| Seedling (standard)- full size tree that is slower to bear without resistance to wooly apple aphid |

**Disease resistance codes: VS = very susceptible, S = susceptible, MR = moderately resistant, R = resistant, VR = very resistant, UK = unknown.*

*** Bloom time is indicated by a numerical code from 1 to 5 with 1 earliest and 5 latest. Cross pollination does not require the same number but closer numbers are preferable.*

**** Indicates cultivars with sterile pollen that will not pollinate other cultivars.*

## Pear Cultivars for Tennessee

Green shading represents disease resistant cultivars which may reduce disease issues or enable fewer sprays and lead to a higher opportunity for success. Yellow shading represents cultivars with more disease susceptibility while red shading represents cultivars with disease suceptability or cultural needs that will often lead to poor success in residential production in Tennessee. Bloom groups are suggestions for cultivars well suited for cross-pollination.

| NAME | CULTIVAR DESCRIPTION | HARVEST TIMING/ BLOOM GROUP** |
|---|---|---|
| | *European Pear Cultivars* | |
| **Bartlett** | This well-known English heirloom pear is well-known in trade. It is not recommended for growing in our region due to fireblight and scab susceptibility. | Early/3 |
| **Harrow Delight** | Fruit appearance like Bartlett with yellow skin that sometimes has a red blush. Very cold hardy and productive tree that will need fruit thinning. Requires 900 chill hours. Smooth flavorful fruit that is greenish yellow with a red blush that tend to drop when ripe. Matures two weeks before Bartlett. Fireblight resistance. Good pollenizer would be Moonglow. | Early/3 |
| **Kieffer** | Heirloom pear reported to be discovered in Pennsylvania in the mid 1850s. Large fruit is juicy, gritty and commonly used for cooking or preserving. Consistent producer that performs well in hot climates and has fireblight resistance. | Early/2 |
| **Moonglow** | Early ripening pear with soft and juicy flesh (with little grittiness). Trees are vigorous, upright and bear fruit on spurs. Released in the 1960s. Resistance to fireblight. Good pollenizer would be Starking Delicious. | Early/3 |
| **Sunrise** | A 2006 introduction by the USDA and Ohio State. The fruit is yellow with a nice red blush that is good for fresh eating as well as storage. The sugar content is relatively high and the fruit is juicy with a good aroma. Harvest is prior to Bartlett. Moderately resistant to fireblight. | Early/3 |
| **Ayers** | Early bearing tree that is an old southern favorite with low chill (about 300 hours). Used for fresh eating or canning. Reported to be self-pollinating but production will likely increase with cross pollination. Fireblight resistant. | Early-Mid/3 |
| **Honeysweet** | Modern cold hardy pear with a Seckel parent. The large fruit is richly flavored and sweet with a rusted skin. Self-fruitful but yield improved with a pollenizer. Fireblight resistant. | Early-Mid/3 |
| **Maxine (Starkling Delicious)** | A good all purpose pear discovered in Ohio around 1900. Vigorous tree that is upright but should be thinned to keep cropping consistent. Inconsistent fruit size with find russetting. Fruit is free of grit, juicy and stores well. Requires pollenizer. Moderate fireblight resistance. Good pollenizer would be Moonglow. | Early-Mid/3 |
| **Blake's Pride** | Modern pear released by the USDA that produces an upright, vigorous tree that has sweet fruit with a smooth texture similar to Comice. Can be stored and used for canning or baking. Requires pollenizer. Fireblight resistant. | Mid/3 |
| **Orient** | Large, nearly round fruit with thick skin and firm flesh. Requires about 400 chill hours. Good keeping quality with fireblight resistance. Large tree is vigorous and productive. It is self-fruitfull, but will produce larger fruit when cross-pollinated. | Mid/3 |
| **Potomac** | USDA introduction from the 1990s that has glossy skin of a light green color that is like an Anjou. There is a good balance between sweet and acid and the fruit has a moderate storage life. Requires pollenizer. Fireblight resistant. | Mid/3 |
| **Seckel** | Also known as Sugar pear, this small, russetted fruit has very good flavor that is smooth and very sweet as well as aromatic. Naturally semi-dwarf in size. Noted to be self-fertile, but production is better with pollenizer. Moderate fireblight resistance. | Mid/3 |
| **Magness** | USDA introduction from the mid 1900s that is a cross between Seckel and Comice. Good flavor and soft texture with thick skin and long storage potential. Vigorous tree with fireblight resistance. Sterile pollen, so pollenizer (essentially any other European pear) is required. | Late/3 |
| **Shenandoah** | Modern pear cultivar (Bartlett type) released in early 2000s by the USDA after being bred by researchers at the West Virginia Applachian Tree Fruit Station. Good flavor with sweet, aromatic and juicy flesh. Reliable cropping and storage potential. Likely to require a pollenizer. Scab resistance and moderate fireblight resistance. | Late/3 |

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|---|---|---|
| **Warren** | Discovered in Mississippi in the 1970s. Medium to large green to red fruit that is pale green with smooth flesh (no grits) and excellent flavor and good keeping quality. Self-fertile and good pollenizer for other cultivars. May be closely related to Magness. Fireblight resistance. | Late/3 |
| **Flordahome, Hood, Pineapple** | Low chill cultivars developed for more southern growing regions. | |
| ***Asian Pear Cultivars*** | | |
| **Hosui** | Large, juicy, sweet and high-quality fruit with bronze skin. Vigorous tree that should be thinned to prevent overcropping. Only stores for a few weeks. Susceptible to fireblight. Partially self-fertile. | Early-Mid/3 |
| **Shinseiki (New Century)** | A medium-sized, golden round crisp fruit that ripens mid-season and stores well. The tree is an early bearer and productive but requires thinning. Low chill hours. Suceptible to fireblight. Self-fertile. | Early/3 |
| **Yoinashi** | This is a vigorous tree with good production and heavy fruit set that should be thinned. Partially self-fertile but a pollenizer will help reach full yield potential. Firm and crisp flesh with good flavor. Fireblight resistant. | Mid/3 |
| **Korean Giant (Olympic)** | Large brown-russet fruit that have juicy, sweet flesh. The trees are cold hardy with precocious bearing. Thinning is needed to prevent overcropping. Requires pollenizer. Later harvest and good storage. Fireblight resistant. | Late/3 |
| **Shinko** | Brown-russeted fruit that is large with good flavor and texture. This is a vigorous and productive tree that has an annual bearing habit with thinning. Partially self-fertile. Fireblight resistant. | Late/3 |
| **Tennosui** | A hybrid pear developed in Texas in the 1990s with what is likely a Tennessee (European) and a Hosui parent. It has large fruit with good tasting flesh that is slow to brown. Reported to be self-fertile and to have some fireblight resistance. | Uncertain |
| ***Rootstock Selection for European and Asian Pear Trees in Tennessee*** | | |
| Quince- 45% dwarfing with early bearing and resistance to crown gall, pear decline, and nematodes | | |
| OH x Farmingdale 35% dwarfing with resistance to fireblight | | |
| OH x Farmingdale 20% standard size tree with resistance to fireblight and potential for more productivity, widely adapted more tolerant of wet soils | | |
| OH x Farmingdale 333- semi dwarf tree (66% of standard) with resistance to fireblight and reduced suckering | | |
| Some Asian pears are grafted on P. betulaefolia for vigor and soil moisture tolerance or P. calleryana for dwarfing, early bearing, and soil moisture tolerance | | |

*** Bloom time is indicated by a numerical code from 1 to 5 with 1 earliest and 5 latest. Cross pollination does not require the same number but closer numbers are preferable.*

**** Indicates cultivars with sterile pollen that will not pollinate other cultivars.*

**References and Further Reading:**

Cultivar information from recent Extension publications in the Southeast were used to develop these tables.

- https://www.extension.purdue.edu/extmedia/BP/BP-132-W.pdf
- https://extension.uga.edu/publications/detail.html?number=C740&title=Home%20Garden%20Apples
- https://extension.uga.edu/publications/detail.html?number=C742&title=Home%20Garden%20Pears
- https://hort.purdue.edu/newcrop/proceedings1990/V1-304.html

**Potential Suppliers:**

Apple: https://docs.google.com/spreadsheets/d/1_G3KloWKIbFD4f8YwFue7b7nbO-lV-siBhT5IlCvoz8/edit#gid=1931910585

Pear: https://docs.google.com/spreadsheets/d/1_G3KloWKIbFD4f8YwFue7b7nbO-lV-siBhT5IlCvoz8/edit#gid=1201109838

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