Smart Gardening: Considerations for growing backyard tree fruit

Diane Brown and Duke Elsner,
Michigan State University Extension

Growing backyard tree fruit takes a commitment to soil preparation and multiple years of care before you can harvest a crop. Some tree fruits double as attractive landscape plants. In addition to growing what you like to eat, select particular fruit types and cultivars based on the growing conditions, space availability, pest and disease susceptibility, and the time and effort you are willing to invest in their care.

The tables in this tip sheet summarize the number of years to harvest a crop of many commonly grown tree fruits, as well as requirements related to soils, hardiness and spacing.

General considerations

- Most tree fruits require annual maintenance including pruning, training and fruit thinning. Some will need staking or trellising.
- Choosing rootstocks can be very important for tree fruits. It influences tree size and whether or not a tree requires staking, and affects disease resistance, winter hardiness and tolerance to different soils.
- Most tree fruits will require pesticide applications to control key pests (including diseases) to get useable fruit. Apply the principles of integrated pest management (IPM) to help maintain fruit quantity and quality while minimizing pesticide use.
- In general, fruit trees require full sun (6-8 hours per day). Just a few hours a day of shade can negatively impact the rate of growth, fruiting potential and the cold hardiness of the plants.
- As long as there is good drainage, most tree fruits do well in sandy loam to loamy soils with a slightly acid to neutral pH (6.0-7.0). Heavier clay soils are usually a problem, unless drainage is improved. Soil drainage in poor sites can be improved by installing drain tiling, planting on berms or planting in raised beds.
- Tree fruit spacing in-row needs to be about equal to or greater than the expected mature tree height. Between-row spacing can be varied to accommodate equipment clearance needs or efficient space utilization, but it should not be less than the expected mature height. If you are planting trees grown on dwarfing rootstock, spacing can be reduced—ask when you purchase.
- Select fruit cultivars that are adapted to the winter hardiness zone of your setting. Winter temperatures affect the survival of most fruit crops.
- Planting fruit trees on a gently sloped site where cold air can drain away will lessen frost and freeze damage to blossoms in spring and frost damage in fall. The slope direction can impact the sunlight exposure and temperature characteristics of sites. Northern-and eastern-facing slopes tend to be cooler and may delay ripening of fall-harvested fruits.

Table 1. Some site and cultural considerations for growing backyard apples.

Apple tree size	Mature sizes	Soil requirements, including pH	Winter hardiness	First harvest	Other considerations
Standard size	Height about 20-25 feet, can be up to 40 feet wide.	Sandy loam to clay loam. Needs good water drainage. Can plant on a mound or berm if needed. pH range of 5.5-7.5 is OK.	Zones 4-8 for most; some hardy to Zone 3. Dwarf trees require support.	7-10 years	Most need a pollinizer tree. Major pests include apple scab and codling moth. Look for scab and fire blight resistant cultivars to reduce pesticide applications needed.
Semi-dwarf	Height and spread about 12-18 feet.			5-7 years, depends on rootstock.	
Dwarf	Height and spread about 6-10 feet.			2-5 years, depends on rootstock.	





Table 2. Some site and cultural considerations for growing other tree fruits.

Tree fruit	Mature sizes	Soil requirements, including pH	Winter hardiness	First harvest	Other considerations
Apricot	Standard trees are 15-25 feet tall by 20 feet wide. Dwarf trees are 8-10 feet tall and wide.	Does not do well in poorly drained soils; best on loamy soils. Requires pH range of 6.0-7.0.	Zones 5-8; some hardy to Zone 4.	2-5 years	Some cultivars require a pollinizer. Flowers very early; spring frosts often cause crop loss.
Nectarine	Standard trees are-12-15 feet tall and wide. Dwarf trees are 8-10 feet tall and wide.	Does not do well in poorly drained soils. Requires pH range of 6.0-7.0.	Zones 5-8	2-4 years	No pollinizer needed. Less winter hardy than peaches. Look for cultivars resistant to bacterial spot and brown rot.
Pawpaw	15-25 feet height and spread.	Sandy, well-drained loam soil is best. Requires pH range of 6.0-7.0.	Zones 4-8	5-7 years	Need two varieties for cross-pollination. Tolerates partial shade.
Asian pear	Semi-dwarf trees are 12-15 feet tall by 10-12 feet wide. Dwarf trees are 8-10 feet tall by 6-7 feet wide.	Well-drained soil needed, install drain tile or plant on berm if needed. Requires pH range of 6.0-7.0.	Zones 6-9; some hardy to Zone 5.	4-6 years	Needs a pollinizer tree. Usually less susceptible to fire blight than European pears.
Pear	Standard trees are 18-20 feet tall by 12-13 feet wide. Dwarf trees are 8-10 feet tall by 6-7 feet wide.	Well-drained soil needed, install drain tile or plant on berm if needed. Requires pH range of 6.0-7.0.	Mostly Zones 4-8. Summercrisp, Ure and Golden Spice are hardy to Zone 3.	4-6 years	Needs a pollinizer tree. Fire blight can be a major problem. Look for resistant cultivars. Pear psylla is a common insect problem.
Peach	Standard trees are 12-15 feet tall and wide. Dwarf trees are 8-10 feet tall and wide.	Does not do well in poorly drained soils; prefers sandy or loamy soils. Requires pH range of 6.0-7.0.	Zones 5-8	2-4 years	No pollinizer needed. Flowers early; spring frosts often cause crop loss. Some cultivars have resistance to bacterial spot. Brown rot is a major peach disease.
Plum	Standard trees are 18-20 feet tall and wide. Dwarf trees are-8-10 feet tall and wide.	Prefers sandy loam- loam. Plant on mounds or berms if soil is heavier. Best pH range 6.5-7.0.	Mostly Zones 5-8; some hardy to Zone 4.	3-6 years	Most Japanese and hybrid plums require a pollinizer. European plums usually don't. Brown rot and black knot are common diseases.
Sweet cherry	Standard trees are 18-25 feet tall and wide. Dwarf trees are 10-14 feet tall and wide.	Will not tolerate clayey or poorly drained soils. Requires pH range of 6.0-7.0.	Mostly Zones 5-8.	Standard trees 6-8 years; Dwarf trees 2-3 years.	Most cultivars need a pollinizer tree. Some are self-pollinating. Look for varieties with resistance to cherry leaf spot and brown rot.
Tart cherry	8-15 feet tall and wide, depending on cultivar.	Heavier soils are better with Mazzard rootstock and lighter soils are better with Mahaleb rootstock. Requires pH range of 6.0-7.0.	Zones 4-7	3-5 years	No pollinizer needed. Look for varieties resistant to cherry leaf spot and brown rot.

Published February 2018. This publication is supported in part by the Crop Protection and Pest Management Program 2017-70006-27175 from the USDA National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

For more information on a wide variety of Smart Gardening topics, visit www.migarden.msu.edu or call MSU's Lawn and Garden hotline at 1-888-678-3464.