



# Super Trees for Sustainability

## Fruit Tree Information Guide



**Background** – The regional *Super Trees for Sustainability* Initiative is a multi-year, large-scale tree planting collaborative facilitated by Houston Wilderness that incorporates the 25-mile *Houston Ship Channel (HSC) TREES* Program, the multi-county *Riverine Targeted-Use-of-Buyouts (TUBs)* Program, and targeted urban forestry projects in high health risk communities, particularly related to the planting of fruit trees. These areas often experience elevated health risks because of the increased industrial activity and extreme devastation from weather events because of the reduction of greenspace and forested area that helps to clean air and absorb water. To combat the disproportionate impacts of port and rail-related development, Houston Wilderness is facilitating a collaborative program to plant fruit trees in impacted neighborhoods that will 1) provide ecosystem services like carbon sequestration and water absorption, 2) provide access to fresh food to those in need, and 3) increase education on urban forests and environmental stewardship. This Guide provides tips to aid in the selection of fruit tree species best suited for the Greater Houston/Harris County area, and maintenance of those fruit trees.

## TIPS

- 1 Why plant multiple fruit tree species?** Planting a diversity of fruit tree species ensures that fruit is available to pick at different times of the year and provides resiliency in years when some fruit trees don't produce. When planting these varieties of fruit trees, other considerations include 1) growth conditions, 2) pests and disease yield, 3) time of fruiting, 4) water needs, and 5) pruning and management requirements. More information below.
- 2 Soil Preparation & Fruit Tree Planting**
  1. Choose a well-draining area with plenty of light
  2. Clear large surface rocks, debris, and perennial weeds
  3. Dig a hole for each fruit tree
    - a. Use a pointed shovel to remove any grass and make a hole slightly wider and deeper than the root ball
    - b. Break up the soil on the bottom of the hole and add fungi inoculate
    - c. Remove the plant from the pot and break up the roots a bit
    - d. Place it into the hole and ensure that the tree is about half an inch above the soil level to allow for settling
    - e. Fill in the hole with the removed soil and tamp it down firmly
  4. Add organic mulch near but not against the bark (helps to retain soil moisture, control weeds, and provide micro-nutrients)
  5. Remove any tags or strings that may girdle or strangle the tree as it grows
  6. "Water in" the tree by soaking it well
  7. Prune the tree for the first time
  8. Provide periodic watering depending on the weather and age of the tree
- 3 Ideas of Signage for Fruit Tree Areas** Installing signage near your newly planted fruit trees is helpful to let people know that fruit may begin to grow and mature on the tree, and they will need to wait to pick when the fruit is ripe. Metal signs hold up well to the elements and require little maintenance. Be sure to anchor signs securely to discourage theft.
- 4 The Importance of Pruning** Most fruit trees must be pruned in the late winter to early spring before or just after the buds break and before the flowers emerge (from the end of February to the beginning of March here in Houston). Annual pruning of fruit trees is essential to encourage new growth, control tree height for easy picking, prevent breakage, remove diseased and dead limbs, increase airflow and light infiltration to the center, and correct shape. Some pruning is always better than none. Never remove over one-third of the tree in one year or more than 40% of a peach or nectarine tree.



Sweet Cherry Tree at Lee MS. Planted in 2023.

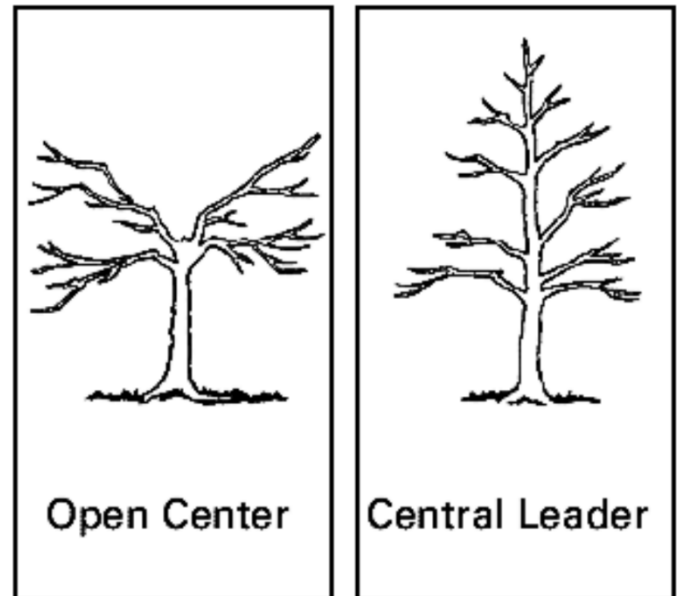


An example of signage

**Choosing Pruning Method Open Center or Central Leader** – Refer to the chart below for the correct pruning method for your species. Also listed in Appendix 1.

Fruit Trees that prefer Central Leader Pruning	
Jujube	Pecan
Mulberry	Oriental persimmon
Black cherry	American persimmon
Sweet cherry	Texas persimmon
Acerola	
Pawpaw	

Fruit Trees that prefer Open Center Pruning
Peach
Nectarine
Japanese plum
Sweet cherry
Mayhaw
Mexican plum



The two most common tree pruning methods <sup>[2]</sup>

### Pruning Objectives – things to consider

- Remove
  - Water shoots/suckers (fast-growing, weak vertical stems from the trunk)
  - Side branches that point to the sky, are too large, or too low
  - Rubbing branches
  - Inward-growing branches
  - Dead, dying, or diseased limbs
- Open up the center for light and airflow
- Thin-out clustered and crowded areas
- Prevent future breakage by removing limbs that are too large and controlling the total weight of fruit per branch
- Trim the tallest growth yearly to keep the tree short

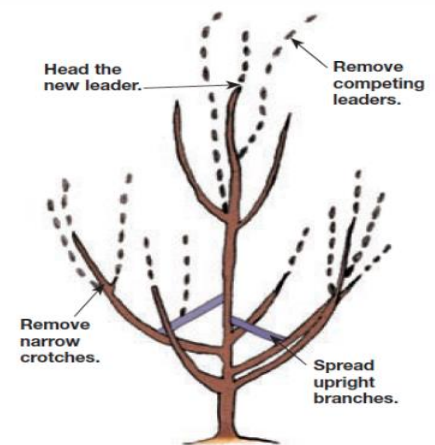


Diagram of central leader pruning of a one-year-old tree sapling <sup>[1]</sup>

**How to Cut** – Use bypass pruners (with curved blades that slide past one another) to make a 45° cut ¼” above the nearest node (see diagram below). Use a hand saw to remove limbs too large for the pruners to cut easily.

**Tree Pruning at Planting for Both Methods** – Always prune the tree after planting. If you are planting a container tree, the roots are initially too small to support all the branches and leaves. Heading the leader, removing too-long side branches, and thinning the canopy will ensure the remaining leaves have enough water to thrive.

### Pruning Berry Bushes and Passion Vines

Berry bushes require a different pruning method than fruit trees. For blackberries and dewberries, remove dead canes in the winter. The top of new canes can also be trimmed to control height and encourage further branching. For blueberry bushes, remove dead and damaged branches in the winter. Remove any crossing or crowded branches to increase light and airflow to the center. Remove one-third of the oldest branches every winter to reinvigorate the plant. For elderberry bushes, remove very old canes to the ground every winter when the shrub is over three years old. If the plant appears to be slowing down production, remove half the oldest branches to the ground. Passionfruit vines are perennial but slow down production and may die after five to six years. To reinvigorate the plant, remove small amounts of old, woody vines every year. Don't prune too vigorously.

#### Pruning Tools

- Bypass hand pruners
- Pruning saw
- Optional – branch spreaders
- Optional – fruit protection bags

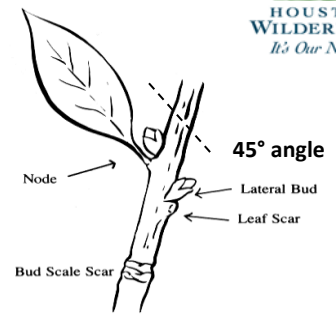
**Tree Pruning Method #1 Central Leader – Year 1** Remove all but one of the competing leaders. Head the new leader and remove or spread vertical side branches that are making acute angles with the trunk.



**Tree Pruning Method #1 Central Leader – Year 2 and Beyond** Remove all but the tallest of the competing leaders. Head the new leader and spread vertical side branches that are making acute angles with the trunk.

**Tree Pruning Method #2 Open Center – Year 1** Remove all co-leaders and choose 4-5 scaffold branches that will create the main form of the tree. Thin out the remaining branches and remove any within one foot of the ground. Remove all inward-facing branches.

**Tree Pruning Method #2 Open Center – Year 2 and Beyond** Maintain the vase-shaped form by removing all inward-facing growth and any new leaders that have emerged. Remove all branches lower than two feet. Remove water suckers and thin out the canopy to allow light and airflow to reach the interior and between branches.



The correct way to prune a branch. Note the 45° cut above the node [3]

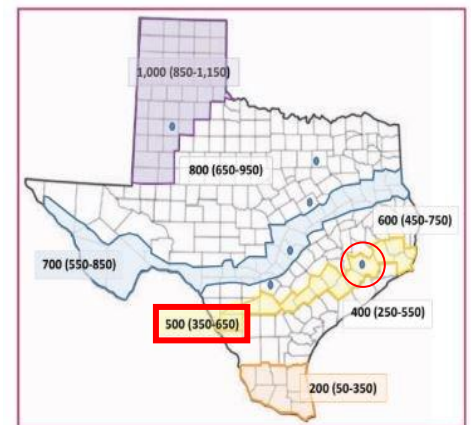
**Helpful Pruning Video** - See the video below for a tutorial on pruning fruit trees from the Philadelphia Orchard Project:

POPCORE 1 - Pruning Series on Fruit Trees and Other Woody Fruiting Plants: <http://tiny.cc/yk5cvz>

## **Important Fruit Tree Terms and Tree Care Instructions**

Every plant species has its own needs, and the site's growing conditions determine which trees will grow well. Each species and variety has variable needs, including light, water, and pollination requirements.

- **Variety** – plants of the same species with extremely similar characteristics and genetics. These plants have been selected for certain traits and are often grafted onto a rootstock of a different variety.
- **Self-fertile plants** – Some plants require a different variety to provide the pollen to make fruit. For species in the table below that aren't self-fertile, plant at least two plants from two different varieties to ensure a good crop.
- **Male and Female trees** – Most plant species are monoecious, where both the female flowers and pollen-producing parts are on the same tree. Some species are dioecious and have male parts and female flowers on different trees. These species, mentioned in Appendix 1 below, require both male and female trees to be planted together to produce fruit.
- **Water needs** – All newly planted trees should be "watered in," which means thoroughly watering the tree immediately after planting so that the roots have better contact with the soil. **Newly planted trees should be watered with a five-gallon bucket thrice weekly when the weather is warm or dry.** Adult trees still need water during the growing season in the spring and especially during the hottest, driest months. **During the hottest time of the year, each tree may need a five-gallon bucket of water every few days.** More if the leaves wilt or brown at the edges. The table below lists water needs for mature, established trees. Low water needs trees may only need supplemental water during the hottest months. High water needs trees will need water multiple times a week during the growing season and hot periods. All trees should not need water when they are dormant in the winter months, as this could cause root rot. Use your best judgment.
- **Rootstocks and grafting** – Many of the fruit trees sold in the Houston area have been grafted, or joined with, a different variety of rootstock plant. This is done when the desired fruit tree has roots that won't grow in our soil. The upper plant is the one to provide the fruit, while the rootstock, or bottom plant, provides the upper plant with nutrients, water, and an anchor. It is important never to bury the graft union (where the two meet) because this will cause rot. Be careful with grafted trees; they tend to be a little more fragile than ungrafted trees. Ensure that the rootstock is compatible with Texas soil and climate.
- **Chilling requirements** – Chill hours are the number of cumulative hours between 32 and 45 degrees in winter. Plants use the number of chill hours to determine when to bud and flower. A plant with a high chill requirement may fail to fruit in a warm year, while a plant with a low chill requirement may lose its flowers and fail to fruit in a cold year. When choosing your variety of peach or nectarine, it is important to choose a variety with similar chill requirements to your region to ensure the best chance of fruiting. "Within the Harris County area, Pasadena and the Galveston Bay area on the south side of the county receive approximately 350–450 chill hours; downtown Houston receives approximately 450 hours; Cypress and the Bear Creek area receive approximately 600 hours." [5]
- **Where is the citrus?** Citrus species have been intentionally omitted from this list because they take many months to ripen, are often unhealthy without pesticides, and the trees are at high risk of death if exposed to abnormally cold temperatures. However, some growers may have limited success growing citrus in the Houston area.



Chill hour zones in Texas

Adapted from Texas A&M AgriLife Extension Chill Hours Requirements for Austin [4]

# Appendix 1: Edible Fruit Tree and Shrub List for The Harris County Area



Updated October 2023

Fruit Tree Common Names	Scientific Name	Natural Size at Maturity (without pruning)	Do I need to plant more than one variety?	Pruning type	Water Needs	Best time to plant?		Harvest time	
Mexican Avocado	<i>Persea americana</i>	12-25'+	No	None. Remove dead	High	After mid-March		Late summer	
Jujube	<i>Ziziphus jujuba</i>	15-30'	Yes	Central leader	Medium	Spring		July-August	
Mulberry spp.	<i>Morus rubra, M. nigra</i>	8-70'	No. Male/Female plants separate*	Central leader. To 8'	Medium	Fall		March-April	
Peach	<i>Prunus persica</i>	25'	No	Open center. To 12'	High	Spring	Winter	May-August (Variety dependent)	
Nectarine (at NW)	<i>Prunus persica</i>	25'	No	Open center. To 12'	High	Spring	Winter	June-August (Variety dependent)	
Japanese/Chinese Plum	<i>Prunus salicina</i>	30'	Yes	Open center	High	Spring	Winter	June -September	
Black Cherry	<i>Prunus serotina</i>	60-80'	No	Central leader	Low	Fall	Spring	Late summer	
Sweet Cherry	<i>Prunus avium</i>	50-65'	Yes	Open/Central	High	Fall	Spring	Late April-July	
Acerola/Barbados Cherry Tree/ Southern Sweet Cherry	<i>Malpighia emarginata</i>	10-20'	No	Central leader	Low	April-Aug		April-November	
Mayhaw	<i>Crataegus aestivalis</i>	25-30'	Yes	Central Leader	High	Winter		Late April-early May	
Mexican Plum	<i>Prunus mexicana</i>	20-25'	No	Open center	Low	Spring		Early fall	
Pawpaw	<i>Asimina triloba</i>	40'	Yes	Central leader	Medium	Fall	Spring	September-October	
Pecan	<i>Carya illinoensis</i>	100'+	Yes	Central leader	High	Fall		September-November	
Oriental Persimmon	<i>Diospyros kaki</i>	30'	Yes Male/Female plants separate*	Central leader	High	Winter	Spring	October-December	
American Persimmon	<i>Diospyros virginiana</i>	60'	No Male/Female plants separate*	Central leader	High	Fall	Winter	Spring	August-November
Texas Persimmon	<i>Diospyros texana</i>	35'	No Male/Female plants separate*	Central leader	Low	Fall	Winter	Spring	Late summer
Pomegranate	<i>Punica granatum</i>	12-20'	No	Shrub	Low. High when fruiting	Spring		September-October	
Loquat/Japanese Plum	<i>Eriobotrya japonica</i>	25'	Yes	Only light pruning needed	Medium	Fall	Spring	March-April	
Fig	<i>Ficus carica</i>	<20'	No	Pick 3-5 'fruiting' branches	Medium	Winter	Spring	Late spring. May produce late summer-fall.	
Blackberry Bush	<i>Rubus spp.</i>	<7'	Yes	Remove dead canes	Medium	Fall	Winter	Spring	May-July. Primocane varieties may produce fruit in mid-fall
Dewberry Bush	<i>Rubus spp.</i>	<3'	Yes	Remove dead canes	Low	Fall	Winter	Spring	April-May
Blueberry Bush Note: Prefers acidic soil between pH of 4.0 to 5.5	<i>Vaccinium virgatum</i>	3 – 6'	Yes	Remove dead or crossing branches. Remove old branches.	High	Fall	Winter	Spring	Late May-Early July
Elderberry Bush	<i>Sambucus canadensis</i>	6-12'	Yes	Remove old canes annually once plant 3+ years old	Medium	Spring		August-October	
Purple Passionfruit Vine Note: Prefers part shade	<i>Passiflora incarnata</i>	10-30'	Yes	Cut back old vines severely every few years	High	Spring		August-October	

\* These species have separate male and female individuals. Plant multiple plants of these species to ensure that both males and females are represented.



# Appendix 2: Fruit Tree and Shrub Variety List for The Harris County Area



Updated October 2023

Fruit/Nut Tree Common Names	Varieties
Mexican Avocado	'Holland' aka 'Opal' aka 'Lila;' 'Wilma' aka 'Brazos Belle;' 'Winter Mexican' hybrid; 'Joey;' 'Pryor' aka 'Fantastic;' 'Pancho' (Ensure sufficient cold hardiness for the chosen area)
Jujube	'Li,' 'Lang,' 'Sugar Cane.' Both these varieties should be grafted as they do not come true from seed. Other varieties may work as well. Plant more than one variety for best fruiting.
Mulberry spp.	'Pakistan,' Dwarf Mulberry, varieties of <i>M. nigra</i> or <i>M. rubra</i> (ensure it is a fruiting variety)
Peach	'Flordaking,' 'Flordacrest,' 'Junegold,' 'TexKing,' 'Juneprince,' 'Texstar,' 'Southern Pearl,' 'Rio Grande' (Many other good varieties. Should have a chill requirement between 350-650 hours) (Should be on a Nemaguard rootstock and not on Halford rootstock which does not do well in the Houston area)
Nectarine	'Karla Rose,' 'Artic Star White,' 'Panamint,' 'Sunmist,' 'Sunraycer'
Japanese/Chinese Plum	'Santa Rosa,' 'Methley' (self-fruitful and pollinates other varieties), 'Santa Rosa,' 'Golden Chickasaw,' 'Gulf Beauty,' 'Segundo,' 'Shirley,' 'St. Luke'
Black Cherry	Any locally sourced
Sweet Cherry	'Royal Lee,' 'Minnie Royal' (Must plant both varieties for fruiting)
Acerola/Barbados Cherry Tree	Any locally sourced
Mayhaw	'Super Spur' and 'Super Berry'
Mexican Plum	Any locally sourced
Pawpaw	Rebecca's Pawpaw,' 'Mango,' 'Prolific,' 'Sunflower,' 'Wells'
Pecan	'Choctaw,' 'Jackson,' 'Moreland,' 'Oconee,' 'Pawnee,' 'Sumner'
Oriental Persimmon	Eureka'(astringent until ripe/semi-dwarf), 'Fuyu'(non-astringent), 'Giombo'(astringent), 'Hiratanenashi'(astringent), 'Ichikikijiro'(non-astringent), 'Matsomotowasefuyu'(non-astringent), 'Saijo'(astringent), 'Suruga'(non-astringent). (Grow 2+ varieties together for better fruiting)
American Persimmon	Any locally sourced. Be sure to plant 2+ trees because some varieties have male and female trees
Texas Persimmon	Any locally sourced. Be sure to plant 2+ trees because some varieties have male and female trees
Pomegranate	'Balgal,' 'Cloud,' 'Eversweet,' 'Sweet'
Loquat/Japanese Plum	'Early Red,' 'Big Jim.' (Many loquats sold are of unknown variety but will grow fine in this area. Due to this, the fruit of this species is highly variable.)
Fig	'Banana,' 'Celeste,' 'Deanna,' 'LSU Purple'
Blackberry Bush	'Kiowa,' 'Brisson,' 'Ouachita' (thornless), 'Rosborough,' 'Shawnee' (Primocane varieties tend to do poorly in the Texas heat)
Dewberry Bush	Any locally sourced
Blueberry Bush	Plants of each group are compatible with each other for cross-pollination: ('Brightwell,' 'Austin,' 'Premier,' 'Climax') ('Powderblue,' 'Tifblue,' 'Brightwell') ('Alapaha,' 'Austin,' 'Premier')
Elderberry Bush	'Adams,' 'Johns.' (Grow more than one variety for a better chance of success)
Purple Passionfruit Vine	Any locally sourced. (Grow more than one variety for a better chance of success)

## References and Resources

1. Marini, Rich. "Two Ways to Prune New Fruit Trees." FineGardening, 23 Feb. 2023, [www.finegardening.com/project-guides/pruning/two-ways-to-prune-new-fruit-trees](http://www.finegardening.com/project-guides/pruning/two-ways-to-prune-new-fruit-trees)
2. Gelley, Christine. "Pruning Fruit Trees." Noble County Agriculture Natural Resources, The Ohio State University, 2 Mar. 2018, <https://u.osu.edu/gelley.2/2018/03/02/pruning-fruit-trees/>
3. Wade, G., & Westerfield, R. R. (2007, January 1). Basic principles of pruning woody plants. University of Georgia Extension. <https://extension.uga.edu/publications/detail.html?number=B949&title=basic-principles-of-pruning-woody-plants>
4. Chill hour requirements for Austin. Urban Programs Travis County. (2023, August 14). <https://travis-tx.tamu.edu/about-2/horticulture/edible-gardens-for-austin/fruits-and-nuts-for-austin/chill-hour-requirements-for-austin/>
5. Adams, William D. "Recommended Fruit and Nut Varieties Harris County and Vicinity." Texas A&M AgriLife Extension, Texas A&M AgriLife, [counties.agrilife.org/harris/files/2011/05/fruitnut.pdf](http://counties.agrilife.org/harris/files/2011/05/fruitnut.pdf)
6. Fruit & Nut Resources – Fruit and Nut Fact Sheets. Aggie Horticulture®. <https://aggie-horticulture.tamu.edu/fruit-nut/>

Updated October 2023