



# Tart Cherries in the Garden

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## Summary

Tart cherry (*Prunus cerasus*), also known as sour cherry or pie cherry, is an excellent addition to home orchards. A single tree can produce an abundant supply of cherries for canning, drying, freezing, juicing, jams, preserves, and baking. The trees are medium-sized, grow at a moderate rate and can easily be tucked into a backyard landscape.

Tart cherry is a member of the genus *Prunus* which is comprised of the stone fruits such as nectarine, peach, and almond. Tart cherry is closely related to sweet cherry (*Prunus avium*); however, tart cherry fruit is more acidic, contains more juice, and is less firm than sweet cherries. Tart cherry is native to an area in Hungary and Romania referred to as the Carpathian Basin.

## How to Grow

**Site Selection:** Tart cherries are cold hardy to zone 4. Mid-spring blooming makes crops susceptible to frost damage. However, tart cherry trees tend to be more cold hardy and later flowering than other stone fruits. Trees that are placed on the south or west side of a home or building will bloom earlier, making the tree and blossoms more susceptible to spring frosts. If possible, plant trees at the top of a slope to help prevent freezes during bloom by allowing cold air to drain to a lower elevation and away from the tree. Trees require at least eight hours of full sun each day in order to promote bud and fruit formation. Trees placed in shade will have a significant decrease in fruit yield. Avoid planting trees in lawns as water and nutrient requirements differ between the two.

**Site Preparation:** Because tart cherries are a long lived crop, site preparation is important and time should be taken to properly prepare prior to planting. Perennial weeds are most easily controlled before trees are planted. Soil tests are helpful for providing soil preparation

recommendations. A basic soil test will tell you the soil texture, pH, salinity, and will provide recommendations for soil nutrients. Amendments and some fertilizers should be incorporated into the soil before planting. Tart cherries thrive in well-drained, loamy soil. Avoid heavy clay soils that remain wet as this can promote root rot and prevent trees from thriving. The ideal soil pH is 7.0, but tart cherries are adaptable and can be productive in alkaline soils with a pH below 8.0.

**Rootstocks:** Fruit trees are commonly grafted to rootstocks to control tree size and other characteristics. The standard rootstock for tart cherry is ‘Mahaleb’. Trees produced on ‘Mahaleb’ rootstocks are considered full size trees and are typically 20 feet tall and wide. Tart cherries will also do well on dwarfing rootstocks such as the Gisela® rootstocks series, where mature trees will be 40 to 90% the size of the standard ‘Mahaleb’ tree.

## Recommended Cultivars

- ‘**Montmorency**’ is the most commonly grown cultivar and the commercial standard for Utah. Trees produce high yields of large bright red fruit with firm, white flesh, clear juice, and are typically good quality. Fruits in Utah usually ripen early to mid-July.
- ‘**Northstar**’ fruits are medium sized with red juice and ripen slightly later than ‘Montmorency’. Trees are slightly smaller than ‘Montmorency’.
- ‘**Meteor**’ produces a medium-sized, bright red fruit and clear juice and ripens 1 to 2 weeks after ‘Montmorency’. Later bloom decreases risk of spring freeze damage.
- ‘**Balaton**’ fruits are larger, firmer, and sweeter than ‘Montmorency’. Large pits can make mechanical processing difficult, but should not be problematic for homeowners.
- ‘**Danube**’ fruits are dark red, medium to large in size, and sweeter than ‘Montmorency’ making this

an excellent choice for fresh eating. Trees tend to be susceptible to winter injury and produce smaller yields than some other cultivars like 'Balaton'.

- **'Jubileum'** is an early ripening cultivar with dark red fruit. Fruits typically ripen 10 days before 'Montmorency', however yields have been noted to be small.

**Planting:** Tart cherries are sold as either bare root or potted plants. Ideally, plant in early spring or fall. Trees can be transplanted in the summer months, but it is stressful for the trees and makes establishment more difficult. If planting bare root trees, be sure to handle trees carefully and not allow roots to dry out before planting. Dig a hole deep and wide enough to accommodate the roots when fully spread out and at the original planting depth. Any damaged roots should be pruned prior to planting. For potted trees, dig a hole the same depth and twice as wide as the root ball. With both bare root and potted plants, be aware of planting depth, making sure not to cover the graft union with soil.

**Spacing:** Tree spacing for 'Mahaleb' rootstocks is 20 to 24 feet between trees. Semi-dwarf trees can be planted closer, depending on rootstock size, between 6-12 feet apart. Tart cherries are a medium sized tree and are an excellent choice for planting under power lines.

**Irrigation:** Initial watering is critical to newly planted trees; however, overwatering can contribute to root damage and increase susceptibility to disease. As trees establish, deep, less-frequent irrigation is ideal to allow water to penetrate the entire root zone. Drip irrigation or soaker hoses are ideal for watering because it avoids wetting the canopy, which contributes to the development of fungal problems. When watering mature trees, water should reach a depth of 18 to 24 inches. If trees are planted in turf, sprinklers are generally acceptable, but remember irrigation should be deep and infrequent, so lawn irrigation events should be scheduled as far apart as possible, while still keeping lawn green. When planted in turf, lawn should be kept 4 feet away from the base of the tree.

**Weed Control:** Weeds and turf under the canopy of the tree compete with the tree for nutrients and water. Tree roots vary in depth with some main roots going very deep, and many smaller roots within a few inches of the soil surface. Avoid tilling under tree canopies, instead hand pull, hoe, or use shallow hand cultivation. Some herbicides are labeled for use around fruit trees; care should be taken to avoid application to tree trunks. When using herbicides, always follow label directions and for up-to-date label information, reference the [Pacific Northwest Weed Management Handbook](#).

**Fertilization:** Soils should be tested every 3 to 4 years or if trees are underperforming. Carefully monitoring yearly shoot growth helps determine if additional fertilizer is needed. Shoots on young, non-bearing trees should grow about 18 to 30 inches per year, and trees just starting production should produce new shoots 6 to 12 inches long. Fully mature trees will produce shorter shoots between 4 and 8 inches long annually. To support healthy growth, trees that are 1 to 5 years old should receive ¼ cup of 21-0-0 fertilizer in the early spring when trees are beginning to leaf out. Mature trees should receive ½ cup of 21-0-0 annually. Fertilizers should be applied to the dripline of the tree and watered into the soil immediately after application. If trees are struggling to produce new growth, a second application may be needed in mid-May. Do not fertilize trees after July. Deficiencies of potassium or manganese can occasionally occur in trees but should be determined through a leaf tissue analysis before application of any mineral nutrients. More information for this test can be obtained through your county Extension office.

Iron deficiency is a common problem in tart cherries. Symptoms of deficiency manifest as interveinal chlorosis (yellowing) on leaves of the newest growth. Iron is abundant in Utah soils, but is often not available for plant uptake due to high soil pH. To remedy iron deficiency, an application of EDDHA chelated iron should be made to the roots early in the spring. If problems persist, a foliar application of chelated iron can be applied in early summer. As rate of application varies between products, follow label directions.

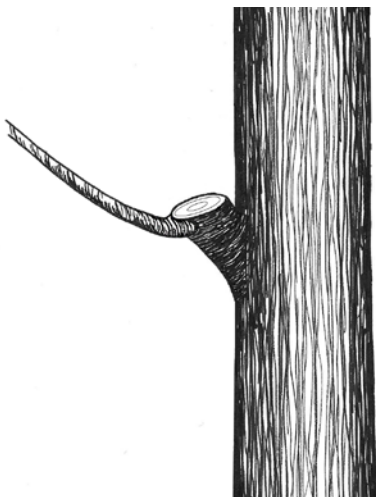
**Pollination:** Tart cherries are self-pollinating or self-fruitful, meaning they do not require another cultivar planted as a pollinizer or source of pollen. However, some cultivars may set more abundant crops with cross pollination from other tart cherry tree varieties that are planted nearby.

**Pruning:** Tart cherry fruit is formed on spurs (short shoots) on 2-year-old and older wood (Figure 1). Care should be taken when pruning to maintain spurs and an adequate amount of fruiting wood in the canopy. Fruiting buds form on wood that receives adequate amounts of sunlight (30% of full sun or more). It is important that light is able to penetrate into the canopy to ensure adequate bud formation. To facilitate a balance of fruiting and vegetative growth, and to improve light penetration and air circulation through the canopy, tart cherry trees can be pruned to a multi-leader open center form.



**Figure 1.** Tart cherry fruiting spurs and buds.

In Utah, prune trees in February or March. Begin by removing any damaged or diseased branches. Maintain an open canopy, using a combination of thinning and renewal pruning cuts. Thinning cuts remove branches back to the branch collar, whereas renewal cuts leave a stub (4 to 6 inches in length) to regrow branches from the same location (Figure 2). New fruiting wood will arise from buds on the stub creating younger, more fruitful wood in the tree. The tree should consist of three to five permanent scaffold (main) branches. Large lateral branches that have become half the diameter of the main scaffold should be renewed. Typically, three to five of the largest lateral branches should be renewed annually to promote light distribution through the center of the canopy. Shoots that are nearly vertical up or down should be removed. Scaffold branches that are growing with wide crotch angles (10 and 2 o'clock angles) are strong and able to support the weight of the crop. Narrow angled branches are weak and may break with heavy crop loads. Any suckers that have formed at the base of the trunk should be removed annually.



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**Figure 2.** Renewal cut and the resulting renewal growth from the underside of the stub. For tart cherry this stub should be left 4 to 6 inches long.

## Common Problems

**Winter Injury:** Tart cherries are hardy and rarely injured by winter temperatures in Utah. However, warm sunny days followed by clear cold nights can cause trunk injury known as southwest winter injury or sunscald. Cracking on the southwest side of the trunk will occur in winter months, leaving an opening where insects and disease can enter and further damage the trunk. Young tree trunks and lower limbs should be wrapped in the fall with a white colored tree wrap to prevent winter injury. It should be removed in the springtime and then reapplied in the fall. Trunks can also be painted in the late fall with diluted (mix 1:1 with water) interior white latex paint. Winter injury is exacerbated by drought. Making sure that trees are well watered in the fall before freezing temperatures arrive will help prevent winter injury. For more information, see [Sunscald Injury or Southwest Winter Injury on Deciduous Trees](#).

**Powdery Mildew:** Powdery mildew (*Podosphaera clandestina*) is a fungal infection that attacks the leaves and fruit of tart cherry. It is characterized by a white or light gray covering of spores or mycelium on the leaves of the tree. Leaves can curl, become stunted and crinkled, and may drop prematurely. Early control is needed to avoid fruit damage. If left untreated, infections can spread to the leaves and fruit of the tree. Management should include a combination of cultural management and chemical fungicides. For the most current control options see the Intermountain Tree Fruit Production Guide or USU Extension Fruit Tree Pest Advisories on [Powdery Mildew](#). When applying chemicals, it is important to always follow label directions.

**Western Cherry Fruit Fly:** Western Cherry Fruit Fly (*Rhagoletis indifferens*) is a small fly that lays eggs in ripening tart cherry fruit. Flies are characterized by a dark banding pattern on the wings that look like a malformed letter 'F'. White maggots infest cherries two to three weeks before harvest. After 10 to 21 days, maggots make a hole in the fruit to exit, drop to the ground and pupate. Flies overwinter as pupae in the soil and emerge in the spring. Peak emergence often coincides with fruit ripening in late June and early July, and there is only one generation per year. Degree day models are used to determine first emergence and spray dates. Flies will typically lay eggs in the fruit once the fruit color changes from green to yellow. Spray date information can be obtained through the [USU Fruit Pest Advisories](#) and the [Intermountain Tree Fruit Production Guide](#).

## Harvest, Storage, and Use

A full size well-managed tart cherry tree can produce from 100 to 150 pounds of fruit. Fruit is ripe when skin has obtained a deep red color, usually in mid-July. In the home garden, tart cherries can be harvested by hand. Unlike sweet cherries, stems do not need to remain on fruit as cherries are usually processed in some way. Tart cherries can easily be pitted and frozen or dehydrated for later use. Pitting is easier when cherries have been chilled. Commercially produced tart cherries are typically chilled by submerging harvested fruit in cold water for several hours in preparation for pitting. Fresh tart cherries do not store well and should be processed immediately after harvest. Canning, juicing, freezing and dehydrating are common ways to preserve harvested fruit. Tart cherries also make excellent pie filling. Fruit is high in antioxidants and is noted for its many health benefits.

## References

- Hirst, P., & R. Hayden. 2001. Growing cherries in Indiana. Purdue University Cooperative Extension Service. 15 July 2018.  
<<https://www.purdue.edu/hla/sites/yardandgarden/wp-content/uploads/sites/2/2016/10/HO-9.pdf>>
- Kesner, C.D., & J.E. Nugent. Training and pruning young cherry trees. Michigan State University Cooperative Extension Service. 15 July 2018.  
<[http://www.canr.msu.edu/uploads/files/Research\\_Center/NW\\_Mich\\_Hort/Training\\_Pruning\\_Varieties/TrainingPruningYoungCherryTreesE1744.pdf](http://www.canr.msu.edu/uploads/files/Research_Center/NW_Mich_Hort/Training_Pruning_Varieties/TrainingPruningYoungCherryTreesE1744.pdf)>
- Marini, R.P. 2009. Growing cherries in Virginia. Virginia Cooperative Extension. 15 July 2018.  
<[https://pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/422/422-018/422-018\\_pdf.pdf](https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/422/422-018/422-018_pdf.pdf)>

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