



Fruit Trees that Fail to Bear

A fruit tree will normally begin to bear fruit after it has become old enough to blossom freely. Nevertheless, the health of the tree and its environment, its fruiting habits and the cultural practices used can influence its ability to produce fruit. Adequate pollination is also essential to fruit yield. If just one of these conditions is unfavorable, yields may be reduced. Perhaps the tree will not bear fruit at all. The grower can exercise some control over most of the factors contributing to fruit production.

Bearing Age

Nursery-grown fruit trees will probably be from one to two years old. The length of time from planting to fruit bearing varies with the type of fruit. Trees growing at a moderate rate generally bear fruit sooner than those grown either too quickly or too slowly. Dwarf fruit trees usually begin to bear one to three years sooner than standard-size trees.

The age that trees can be expected to bear fruit after planting:

Variety	Years to Fruit Bearing
Apple	2 to 5
Apricot	2 to 5
Cherry, sour	3 to 5
Cherry, sweet	5 to 7
Peach	3 to 4
Pear	4 to 6
Quince	5 to 6

Tree Health

Healthy trees produce good quality fruit. Weak or diseased trees produce little or no fruit or fruit of poor quality. The first step in fruit production is to keep the fruit trees healthy. A University soil test will give you accurate information about your soil as well as lime and fertilizer recommendations. Two of the main problems involved are insects and diseases. Typical diseases attacking the leaves and fruit on apple and pear trees are scab fungi. The fungus, which causes brown rot on apricot cherry, peach and plum trees can also attack the blossoms.

Diseases and insects can be controlled through the periodic applications of the proper insecticide and/or fungicide. Do not spray insecticides when the trees are flowering, as this will kill the bees needed for pollination. These materials, if used properly, can be effective against most fruit tree pests. When fruit trees are not sprayed properly or are left untreated, disease and insects may restrict the size and quality of the yield, although the tree itself usually continues to bear fruit. It is also possible to purchase varieties that are resistant to one or more of the common diseases. Contact the Cooperative Extension Center for control fact sheet for specific fruits.

Climate and Weather

Most hardy fruit trees need a certain amount of cold winter weather to end their dormancy and to promote spring growth. When winters are too mild, spring growth is delayed, irregular and slow. These factors extend the period of blooming and, thereby, increase the possibility of frost injury.

Extreme cold during winter dormancy may kill the fruit buds. Winter weather rarely threatens apple, pear, plum and sour cherry varieties. Sweet cherry trees, however, are relatively sensitive to cold until they become dormant. Peach trees are very vulnerable to cold weather. Midwinter temperatures around 10°F below zero can kill their buds. The stone fruits, cherry, peach, plum and nectarine can lose cold hardiness due to extended midwinter warm periods. Damage to the flower buds can be extensive, especially if the warm period is followed by a very cold period.

As the fruit buds begin to grow and open, they become more susceptible to frost injury. The exposed buds can usually withstand temperatures near 24°F. However, the open blossoms of practically all fruit trees will be killed if the temperature drops below 24°F. When a heavy frost is expected, covering the trees will sometimes prevent bud or blossom injury, provided temperatures do not fall too low and the cold weather is of short duration. Polyethylene sheets or plastic bags that reach to the ground are usually effective. Cheesecloth and even old bed sheets may be used. During spring frosts, some commercial growers heat their orchards, but this method is impractical for most home gardeners. An alternative method is to sprinkle the trees with water. Start when the temperature falls to the low 30s. Keep the water running until all the ice is melted. Water must be dripping off the ice at all times or the plant will suffer from frost damage. After a severe frost, injured blossoms may appear normal, but if the pistils (center part of the blossoms) are killed, the tree will not bear fruit.

Pollination

All fruit trees need to be pollinated. Without sufficient pollination, they may blossom abundantly but will not bear fruit. Some species of fruit trees have perfect flowers. Both the anthers, which contain pollen, and the pistils, which develop into fruit, are located in the same blossom. If they bear fruit as a result of pollination from their own anthers, these trees are called self-fruitful.

Self-fruitful tree fruits include quinces, sour cherries, apricots (except Perfection and Riland), peaches (except the J.H. Hale and several others) and European-type plums, such as the Stanley, Green Gage and Italian prune.

However, there are many types of fruit with perfect flowers that cannot produce fruit from their own pollen. These require pollen from another variety and are called self-unfruitful. Self-unfruitful types include most apple, pear, sweet cherry and Japanese and American plum trees. To pollinate adequately, two or more varieties must be planted near each other.

Some species of fruit trees do not fit conveniently into either category. Some have pollen-producing male trees and female trees that produce fruit. To grow them successfully, it is necessary to plant at least one tree of each gender near each other. Fruits grown in Connecticut fitting this category are the hardy kiwi and persimmons. When selecting the varieties of the self-unfruitful tree fruits, make sure the flowering periods of the different varieties overlap. The following planting practices are recommended for the self-unfruitful plants.

Apple

Plant at least two varieties of apple trees near one another. Golden Delicious, a self-fruitful type, is one of the few exceptions to this rule. Poor pollen-producing types, such as Baldwin, Gravenstein, Staymen, Winesap and Rhode Island Greening, need to be planted with at least two other varieties to ensure adequate pollination of all.

Pear

Many varieties of pears are completely or partially self-unfruitful. For adequate pollination, plant at least two varieties together. Note: Bartlett and Seckel pears will not pollinate each other and Magness cannot be used as a pollinator.

Plum

Since most varieties of Japanese and American plums are self-unfruitful, plant two or more varieties together.

Sweet Cherry

Bing, Lambert and Napoleon (Royal Ann) cherry trees do not pollinate one another. Plant a pollinating variety, such as Black Tartarian, Republican, Van or Windsor, or a sour cherry, such as Montmorency, nearby.

Biennial Bearing

Occasionally certain fruit trees, such as apples, bear heavily one year and sparsely the next. This is called biennial bearing. The buds of most hardy fruit trees have been set during the previous summer. Therefore, an especially heavy crop one year may prevent adequate bud formation for the following year. Biennial bearing is difficult to alter or correct. However, it is possible to induce a return to normal yearly fruit production by early and heavy thinning during the year in which the trees are producing their large yield.

Cultural Practices

Fruit trees need full sunlight for best production. Inadequate sunlight delays the beginning of flowering and may reduce the amount and size of fruit. Avoid placing fruit trees where they will be shaded by buildings or by other trees.

Trees will grow more vigorously and bear better if they have adequate space to develop their root systems. Do not plant them where roots of trees or large shrubs will compete for water and plant nutrients. To reduce competition from weeds or grasses, cultivate, use mulch or carefully apply a properly registered herbicide. Avoid excess fertilizer that will produce weak, leggy growth and delay the setting of flower buds. Prune young apple trees to develop a strong framework with a central leader and horizontal branches. Prune out water sprouts as excessive upright growth will delay fruit bearing and reduce the quantity of fruit produced. About 30 to 40 healthy leaves are needed to produce a good quality fruit. Within 30 days after bloom, thin fruit to leave only four to seven fruit per yard along the branches.

For pesticide recommendation, call UConn Home and Garden Education Center at 877-486-6271

This information was developed for conditions in the Northeast. Use in other geographical areas may be inappropriate.

Revised by UConn Home and Garden Education Center 2016.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, the Dean of the College, Cooperative Extension System, University of Connecticut, Storrs. The Connecticut Cooperative Extension System is an equal opportunity employer and program provider. To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, Stop Code 9410, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964.