

Fruits and Nuts

Thinning Tree Fruit

David W. Lockwood, Professor
Plant and Soil Science

A. What is thinning? Thinning involves removing a portion of the developing fruit crop.

B. Why should fruit crops be thinned?

1. To increase fruit size: Removing a portion of the crop results in increased size for the remaining crop. The earlier the crop is thinned, the greater the increase in fruit size will be. Since fruit buds begin forming during the growing season of the year previous to the appearance of the fruit, some thinning is done when the trees are pruned. Frequently, more thinning needs to be done once fruit development begins.

2. To obtain annual production: Alternate bearing is a sequence where a heavy crop develops one year, followed by a very light crop the next year. The degree of alternate bearing will vary among fruit crops and among varieties of the same type of fruit. For some crops, such as Golden Delicious apples, the tendency toward alternate bearing is very strong.

3. To improve fruit quality: Thinning should increase fruit quality both in terms of appearance and taste. Fruit color will be better and taste will be improved when a heavy crop of fruit is thinned.

4. To avoid tree breakage: The excess weight of a very heavy crop can cause limb breakage or splitting, especially when limbs have weak crotch angles or are excessively long.

C. When should thinning be considered?

1. Heavy fruit set: Thinning is particularly important when fruit is set in clusters. Fruit should be thinned even if only part of a tree has a heavy crop.

2. Very young trees: Fruiting can stunt the growth of young trees, thus preventing them from attaining enough size to ever have a good crop.

3. Older trees: As trees age, fruit size tends to decrease. Thinning the crop, even if fruit set is only moderate, may be essential to attain good fruit size.

4. Trees low in vigor: Weak trees need to be thinned more severely than strong trees to attain good fruit size and to allow the tree to become stronger.

5. Injured trees: Thinning the crop allows the tree to devote more energy to repairing the damage.

6. Trees on poor soil: Trees on poor soils cannot support a heavy crop as well as trees on better soils. Thinning the crop heavily will encourage good fruit growth on the remaining fruit.



7. Varietal variation: Certain varieties will not develop good-sized fruit unless the crop is thinned early and heavy.

D. Thinning methods - Depending on the type and the variety of fruit, fruit clusters should be broken up, leaving a single fruit. Fruit should be spaced from 6 to 8 inches apart on limbs using one of the following methods:

1. Hand thinning: Hand thinning is the most precise way of adjusting a crop load on a tree. Fruit clusters can be broken up, leaving just a single fruit, and fruit can be evenly spaced about 6 to 8 inches apart on limbs. Damaged or weak fruit can be removed during the thinning operation, leaving a better quality crop on the tree. Hand thinning is often delayed until the largest fruit is about the size of a nickel and the natural drop period for fruit has passed. Unfortunately, hand thinning is often done too late to achieve the maximum benefit.

2. Jarring limbs or clusters: “Bumping” or “jarring” limbs will dislodge some of the fruit and accomplish most of the needed thinning. A padded pole or a plastic bat works well. With them, limbs can be struck hard enough to knock off some fruit, yet not so hard that branches will be damaged. Thinning in this manner is much quicker than hand thinning, though not as precise. It may be necessary to follow up thinning in this manner either by hand thinning to break up clusters of fruit or by using a stick with a short piece of hose on the end to strike the cluster and dislodge some of the fruit. Best results from thinning using this method will

be obtained in early morning or late evening when fruit stems are firm. Thinning in this manner is generally done when the largest fruit are between the size of a dime and a nickel.

3. Chemical thinning: Commercial apple and pear growers can spray their trees at the appropriate time with certain chemicals, which will cause some fruit to drop. Chemical thinning is not an option for most non-commercial growers. It is a very precise operation, and either no thinning or overthinning can result. Good results depend on selection of the correct chemical, rate and time of application. Weather conditions before, during and after application can influence the results. When done properly, chemical thinning gives the best results of all the methods used, since it is done earlier than the others. Chemical thinning is also the least expensive method. Sevin, a common insecticide, will cause fruit thinning in some varieties of apples when applied within 30 days after full bloom.

E. Defruiting trees

If fruit trees are used for ornamentals and not for fruit, it is desirable to get rid of the developing crop shortly after blossom. Some varieties of apples and crabapples can be defruited using a spray of 2 tablespoons of Sevin per gallon of water applied at petal-fall. With fruits needing cross-pollination, elimination of the pollinator variety will dramatically reduce the crop on the remaining trees. For varieties where cross-pollination is not necessary, fruit will have to be removed either by “bumping” the branches or hand thinning.

SP307E-500-4/99(Rev) E12-2015-00-045-99