PLANTING & CARE OF FRUIT TREES

PRE-PLANTING CARE

If planting cannot be done immediately, fruit trees should be stored in a cool area for up to two weeks. Do not store trees in a closed area with fruit because Ethylene gas emitted by fruit will kill trees. Keep roots moist by spraying with water as needed. If planting will be delayed further, trees should be 'heeled in' by planting temporarily in loose soil as soon as possible. See general “Tree & Shrub Planting Guide” for more information.

Learning about fruit tree care is essential for any gardener wishing to produce healthy, quality fruit. Fruit tree care can be very complex and intricate at times. While consulting a professional is often the best course of action to resolve any serious fruit tree problems, knowing a few basics about fruit tree care can save you money and give you the satisfaction of caring for your own orchard.

CHOOSE AND PREPARE THE SITE

Select a site with direct sunlight, and full sun all day for best fruit production. Don't plant in shady locations that don't get at least half a day of full, direct sun light or you can expect weak, spindly trees, poor foliage, and poor fruit set. Allow enough room between the planting site and buildings, trees, power lines or other obstructions to allow tree to fill its space when full grown. For cross-pollination, plant trees within 50 feet of one another.

Fruit trees are tolerant of a fairly wide range of soil types, but the soil should be well-drained, with a minimum of 18 inches of soil above any hardpan. They will not tolerate soils where water remains on or near the surface for more than one hour after a heavy rain.

Trees should be spaced at least 15-20 feet apart and planted to allow for proper water drainage. The location should also have good air drainage, keeping low-lying cold air in the spring away from the tree.

• If you are planting out in the lawn, consider marking where you want to plant individual trees, and several weeks before planting, kill the grass in a circle three feet in diameter at each tree site with Glyphosate(RoundUp®) or other similar broad-spectrum or grass-specific herbicides. The killed grass will make a good mulch for a year or so, and is easier to dig through than living grass.

• If you are planting in worked up soil, make sure you remove rocks, roots, and other debris that you don't want present. In fresh soil, don't plant if it is muddy or too wet, but wait until it dries out and is more tillable.

• If soil conditions are too dry, water your tree locations first and bring the soil moisture levels up so that adequate moisture will be available to the tree after transplanting, including the soil outside of the hole walls to encourage new roots to expand in that direction.

HOW BIG OF A HOLE TO DIG?

Dig a hole large enough to hold all the root system of the tree and deep enough to cover the roots properly, approximately twice the diameter of the root system, and two feet deep. Do not plant too deep as trees will suffer and growth will be poor. Plant trees with the graft union exposed and 2-3" above ground level (see diagram on page 2).

Fruit trees have a visible graft union which usually looks like a crook or jog above a straight rootstock and below the straight trunk. Above the graft union is the "scion" or actual variety of fruit that you hope to harvest. Below the graft union is the rootstock, the roots that take up moisture and fertilizer, anchor the tree, and determine the amount of dwarfing characteristic the fruit tree will have.

This planting depth is critical for trees on dwarf or semi-dwarf rootstocks. If the tree is planted too deep and the graft union is below the soil line, the scion variety will form roots and the tree will become a standard-sized tree.

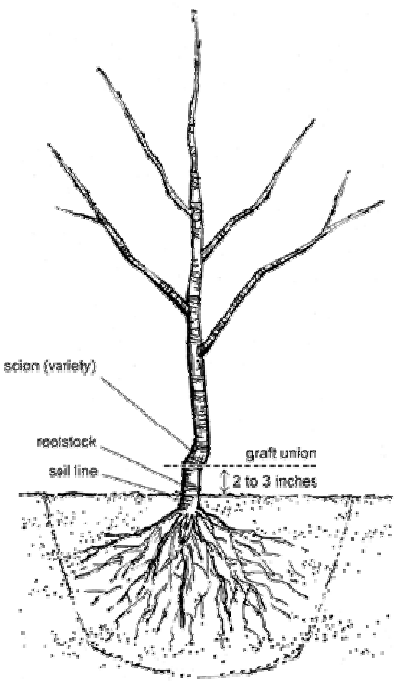
Hand digging: If you hand dig holes with a shovel, try to avoid glazing the sides of the hole when digging. Take a hoe or rake and loosen the soil on the sides and bottom so that newly growing roots can easily penetrate the sides and bottom, without "hitting a wall".

Augering: If you auger holes with a power auger, you will almost always have glazed and hardened sides, even in sandy soils. Loosen them up as described for hand-digging so that you aren't forming something similar to a "clay pot" in the ground.

PLANTING

Spread roots out in the hole on the loose soil, ensuring that they are not twisted or crowded. If roots are too long or stiff to easily fit into the hole, trim them slightly. Use the least amount of trimming on roots, as the roots hold all the energy and food that the young tree needs to get started with. Trimming the roots too much will result in poor initial growth.

Fill the hole with soil in layers and press down the soil firmly around the roots to insure good soil contact and remove air pockets. Air pockets will cause the roots to dry out, not take root, and possibly slow initial tree growth down, or even dry out and kill the tree. It may be helpful at this stage to have someone hold the tree straight while the hole is being filled.



Plant the tree deep enough so that the graft union is two to three inches above the ground. This planting depth will keep dwarf and semi-dwarf trees from growing into standard-sized trees.

WATERING

After the hole is filled, immediately water trees with 3 – 5 gallons of water to saturate the soil, pouring slowly enough so that the water doesn't run off. After settling, insure that the graft union is still 2 - 3 inches above the soil level and adjust as necessary. Leave an inch or more of unfilled hole to allow you to water easily so you can fill it up and let it soak in.

When rainfall is not adequate (less than an inch of rainfall per week), add 3 – 5 gallons of water to newly planted trees at least once each week during the first growing season. Watering the new tree is important to help get it started, especially in the first few weeks after planting.

SOIL AMENDMENTS

What should you put in the planting hole? Only roots, clean soil and water! Use your natural soil as much as possible and minimize the use of soil amendments. If the soil is poor, you can mix in peat moss or thoroughly conditioned compost before filling the hole. A ratio of up to 50/50 peat to soil may be beneficial.

The roots of a fruit tree eventually grow out and extend out past the "drip line" of the tree. The drip line is the farthest reach of the limbs, and in fact, many roots will go farther out than this. So logically, if the roots reach that far out, then any soil amendments in the hole really doesn't go very far. You want to encourage roots to extend far outside of the hole into the natural soil as fast as possible, and amendments may discourage that natural extension.

Fruit trees are very resilient and are forgiving of nearly any type of soil as long as they receive adequate irrigation and nutrients. Adding a thick layer of organic mulch around the base of your fruit trees helps provide nutrients for the tree's feeder roots. These feeder roots are more abundant along the drip line of the tree.

FERTILIZING

Never add fertilizer when planting a fruit tree. The fertilizer can burn the young roots and cause a great deal of damage. If you have not had a soil test done for your soil, a general recommendation is to apply 1/2 pound of 10-10-10 fertilizer or its equivalent 7 to 10 days after planting and the same amount again 40 days after planting. Broadcast the fertilizer evenly, 8 to 12 inches away from the trunk, and work into the top few inches of soil. Trees should be well-watered after fertilizing.

In the second and third years after planting, the tree should receive 3/4 pound of 10-10-10 in March and again in May. Broadcast the fertilizer around the outer edge of the tree keeping the trunk area free of fertilizer, and work into the top few inches of soil. Trees should be well-watered after fertilizing.

WEED CONTROL

Good weed control is very important in the immediate vicinity of transplanted trees to reduce competition. Mulch, herbicide or cultivation may be used to prevent weeds. Do not cultivate the soil surface within the area of the planting hole to avoid damage to the roots.

Composted mulches are useful for weed control and retaining soil moisture however soft mulch materials can harbor mice and voles. Large hardwood chips are less likely to harbor damaging rodents. Crushed limestone or pea-sized

gravel is also a good material. A bushel of stone per tree, 2 - 3 inches in depth extending 2 – 3 feet around the base of the tree is adequate.

PEST MANAGEMENT

Managing disease and insects usually doesn't become a big challenge until the trees begin to fruit. Inspect the trees on a regular basis to see if there is fresh damage.

Insects like aphids, leaf rollers, mites, moths, slugs, and maggots can all destroy fruit trees. In addition to insects, molds, mildew, blights, scab and brown rot can be problematic for fruit trees as well. Because insect infestations and diseases can be very contagious, you must treat any problems quickly to prevent infecting neighboring trees. Contagious outbreaks can even spread to professional orchards and drastically affect fruit production for that season and possibly the following season as well.

Contact the Master Gardeners at the Washtenaw County MSU Extension office (734-997-1819) for help in identifying any diseases or pests and the appropriate treatment methods.

Protect the tree trunk against girdling by rabbits and rodents. Spiral guards, made of white plastic, are a popular and inexpensive option. The white color also helps prevent winter injury to the trunk. However, this type of guard should be removed during the summer and re-fitted in the fall to prevent it from becoming a safe haven for trunk-boring insects.

An alternative solution is to paint the trunk with white interior latex paint and wrap the trunk with an 18-inch tall piece of galvanized hardware cloth. This type of guard doesn't need to be removed in summer.

Deer can cause major damage to young fruit trees by feeding on the developing shoots and leaves in summer, and by browsing the fruit buds in winter. Repellents or home remedies such as small bars of hand soap, or small cloth bags of human hair, can deter hungry deer. Sturdy fencing is the only long-term solution to possible deer damage.

Controlling Birds in Cherry Trees

If you don't work to keep birds from getting to your cherry tree, you stand to lose a serious portion of the harvest. Here are some methods that other home gardeners have used:

Netting: Smaller trees can be wrapped in netting. Use a fine mesh netting to reduce the possibility of birds becoming caught in the netting. It is very effective until the tree grows so big that it becomes impractical to cover it.

Another way to cover the trees is to build a cage or square wooden frame that will sit over your tree. Netting can then be attached to the frame.

Aluminum Pie tins on a string: Its an old favorite. But, it can be irritating to you and the neighbors.

Noise Makers: Anything that is loud and sporadic will startle the birds.

Fake Predators**:** Plastic and blow-up owls and snakes.

PRUNING AFTER PLANTING

Bare root fruit trees have more "top" than the roots can provide for initially. While it may seem wasteful to trim some of the beautiful top of the tree, the remaining tree will start off faster and better.

Pruning fruit trees helps keep them healthy and is necessary for optimal fruit production and longevity of the tree. Pruning removes any dead, diseased or broken branches and select branches to sufficiently open up the canopy of the tree in order to allow for optimal light penetration to the leaves of the tree. Pruning also allows for adequate airflow which is essential to keep the tree dry. A wet tree cannot fight off disease and insects.

Major pruning should be done in the winter months when the tree is dormant and most of its energy is stored in the trunk and roots. Major pruning cuts should be done at an angle so that moisture does not collect and allow for rot and disease to settle. All pruning cuts should be made so that they will heal quickly.

The Central-Leader Pruning System: This is used for pruning apple and sweet cherry trees. A "central leader" is the main stem or trunk of the tree from which other lateral branches develop. Central-leader pruning is based around thinning the lateral branches.

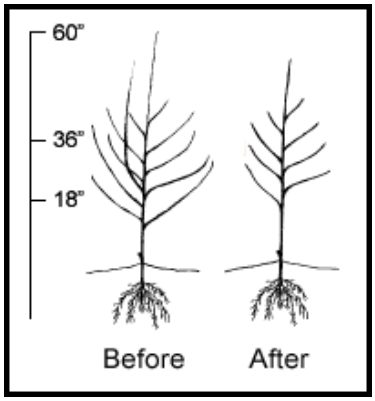
The Open-Center Pruning System: Used for peach tree pruning where there is no dominant, vertical trunk (central leader). Open-center fruit tree pruning is based around three or four main limbs set at wide angles with about five lesser branches on each.

Here are some helpful links to information on the Web about fruit tree pruning:

"Training and Pruning Fruit Trees", http://www.ces.ncsu.edu/depts/hort/hil/ag29.html

"Basic Fruit Tree Pruning Instructions", http://www.lawn-and-gardening-tips.com/fruit-tree-pruning-instructions.html

Apple Pruning



Apple trees respond well to pruning. Prune off any broken branches. If there are a lot of branches, remove many, leaving 5-8 on the trunk. If branches are long (over 24 inches), cut them back to 18 - 24 inches long. The first branch should be no closer than 24 inches to the roots. If there are a lot of high branches, remove or shorten them. Remove limbs with narrow crotch angles that grow parallel to the central leader.

The ideal tree should resemble a pyramid on the trunk when done, with a central leader or trunk growing up the center. It should not appear like an open vase. Some trees do not branch well in the nursery and may resemble whips or have only a few heavier, upright branches. These trees do not need to be trimmed as severely as heavily branches trees.

Here are some helpful links to information on the Web about apple tree pruning:

"Training and Pruning Apple Trees", http://eap.mcgill.ca/CPTFP_7.htm

"Pruning and Training Apple and Pear Trees", http://hgic.clemson.edu/factsheets/hgic1351.htm

Cherry Pruning

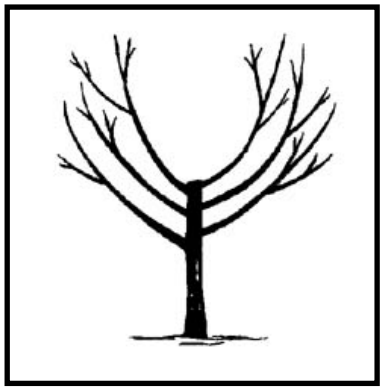
Cherry trees are central-leader trees. This means that there is one main upright trunk, called the leader. All branches will sprout and grow out of this. A properly pruned cherry tree should have a scaffold shape. This means that there are branches circling the tree, perpendicular to the leader, and there should be an area of about two feet between the levels to allow for light to reach the lower leaves and fruit.

The first level of branches should begin between 24 and 36' above the surface of the soil. The branches growing out of the central leader should be either weighted down or tied loosely to string to promote outward growth as opposed to vertical growth. The outward growing branches will produce more fruit and grow less vigorously.

Here is a helpful link to information on the Web about cherry tree pruning:

"Four Simple Steps to Pruning Cherry Trees…", http://extension.oregonstate.edu/catalog/pdf/pnw/pnw592.pdf

Peach Pruning



The open-center or vase-shaped system, is recommended for peach trees for maximum sunlight exposure, maximum yield, and best quality. Pruning and training should be done in the year of planting and every year after to develop a strong, well balanced framework of scaffolds (a tree with a strong trunk and well positioned side branches); and to maintain the balance between vegetative growth and fruit production.

Remove low-hanging, broken, and dead limbs first. Next, remove the vigorous upright shoots along the scaffolds. Lower the tree to the desired height by pruning the scaffolds to an outward growing shoot at the desired height.

During the first year, remove diseased, broken, and low-hanging limbs. Then remove vigorous upright shoots that may have developed on the inside of the main scaffolds and if left could shade the center.

During the second and third years, remove low-hanging, broken, and/or diseased limbs. To maintain the open vase-shape, remove any vigorous upright shoots developing on the inside of the tree, leaving the smaller shoots for fruit

production. Finally, prune the vigorous upright limbs on the scaffolds by cutting them back to an outward growing shoot.

Fruit Thinning:
In years without frost and freeze damage, more peaches will set than the tree can support and fruit must be thinned. Approximately three to four weeks after bloom or when the largest fruits are the size of a quarter, fruits should be removed by hand so that the remaining peaches are spaced about every 8 inches. Fruit thinning will allow the remaining fruits to develop optimum size, shape, and color, and prevent depletion of the tree.

Here are some helpful links to information on the Web about peach tree pruning:

"Growing Peaches and Nectarines in the Home Landscape", http://ohioline.osu.edu/hyg-fact/1000/1406.html

"Home Fruit Production: Peach and Nectarine Culture", http://extension.missouri.edu/xplor/agguides/hort/g06030.htm

ADDITIONAL RESOURCE INFORMATION

There are a number of resources available on the Web for information on growing, managing and spraying home fruit trees. Listed below are Internet links to several good sources of information. Some of these are web sites with a variety of helpful information. Others are pdf files that can printed for reference.

Useful Publications for Fruit, B. Shane, M. Longstroth, & A. Gaus, Michigan State University Extension:
http://web1.msue.msu.edu/fruit/fruitpub.htm

A Word document version of the above page is also available at:
http://www.msue.msu.edu/objects/content_revision/download.cfm/item_id.163740/workspace_id.112004/Useful%20Fruit%20Publications.doc/

Home Tree & Small Fruit Pest Management Guide, University of Rhode Island:
http://www.uri.edu/ce/factsheets/sheets/fruitsprayguide.html#apple

Apple IPM Publications, The University of Maine Cooperative Extension:
http://pmo.umext.maine.edu/apple/Publications.htm

Home Fruit Spray Schedule, University of New Hampshire http://extension.unh.edu/Pubs/HGPubs/HFSS01a.pdf

Spraying the Home Orchard, Cornell Cooperative Extension:
http://counties.cce.cornell.edu/chemung/publications/spray-home-orchard.pdf

No-Spray Fruit Growing in Home Orchard, Cornell Cooperative Extension:
http://scnyat.cce.cornell.edu/vegfruit/articles/homeorchard.htm