

Planting and Care of Fruit Trees, Vines and Berry Bushes

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Planting and Early Care of Fruit Trees

Thank you for your order. Fruit trees can be an attractive and useful addition to the home landscape. This fact sheet will help you to establish new fruit trees that will provide you with beauty and fruit for years to come. Should you have any questions regarding your trees, call our office and we will assist you. Your local County Extension Office can also be very helpful if you have problems with your trees or if you need additional information.

Receiving Your Trees: If trees arrive and you are unable to plant them immediately, store them in a cool place such as your basement, garage or carport. If they need to be there for any length of time, you will need to do one of the following. Either one of these methods will keep your trees for up to six weeks:

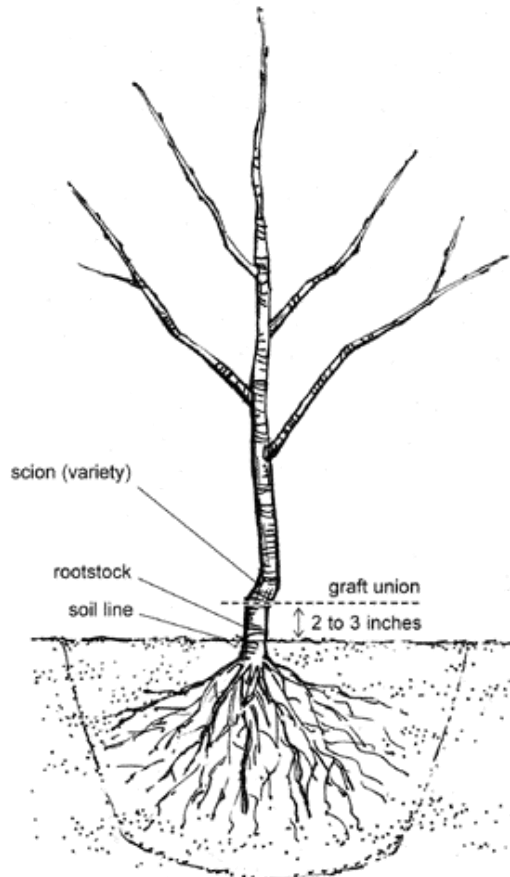
1. Dig a shallow trench and lay the plants on their side with roots in the trench. Cover the roots with moist soil. This is called heeling in. Make sure the soil stays moist. Avoid exposing the roots to frozen temperatures and never let the roots of the trees dry out.



2. Use a large tub or trash can and cover the roots of the trees with peat moss or soil and keep the roots damp.

Digging the Hole:

Select a site with direct sunlight. Allow enough room between the planting site and buildings, trees, power lines or other obstructions for the tree to fill its space when full grown. The hole should be at least 5 feet in diameter.



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 ledge or hardpan.

Start by cutting through the sod in a circle that is about a foot wider than the diameter of the root ball. Roll the sod out of the hole and discard it or use it to cover a place where you want grass. Then dig a hole wide enough to allow the root system to fit without roots wrapping around the edge of the hole in a circle. Dig the hole deep enough to allow the tree to be planted with the graft union two to three inches above ground. 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.

Filling the Hole:

What should you put in the planting hole? Only roots, clean soil and water! Never put any fertilizer in the planting hole. 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.

Trim off any broken or damaged roots before planting. Place the tree in the hole, and after making sure that the depth is correct, fill the hole with clean topsoil. It is helpful at this stage to have someone hold the tree straight while the hole is being filled. Pack the soil in the hole by gently stamping it with your feet. After the hole is filled, water the tree with two to five gallons of water, poured slowly enough so that the water doesn't run off.

Care, Fertilizing and Pruning:

All newly planted fruit trees will benefit from being staked. This will result in a straighter tree with more growth. Staking is especially important for trees planted on a wind-blown site.

Around April 1st, after the tree has started to grow you can apply an organic nitrogen fertilizer. Apply one ounce of actual nitrogen in a 12-inch circle around the base of the tree, and make sure the tree is well-watered after fertilizing. You can also use organic 10-10-10 fertilizer. We recommend about 1/2 pound of 10-10-10 in a complete circle 12 inches around the base of the tree. Another application can be added June 1st. All fertilizer should be applied before mid-June. Late application of fertilizer can lead to late-season growth, and the tree may not harden off in time to withstand winter.

Watering the new tree is important to help get it started. Do not water after planting until new growth begins unless the soil seems very dry. A good rule is to apply five gallons of water around the base of the tree every week of the growing season in which there is less than an inch of rainfall.

Apples and pears are usually trained as central leader or cone-shaped trees. If the tree is an unbranched "whip," prune the stem to a height of 40-44 inches above the soil line. This will stimulate the buds just below the cut to grow. The top bud will grow vertically and form the leader, or trunk of the tree. The next one or two buds can be rubbed off with the fingers to prevent them from competing with the leader.

The buds that grow out below the top two or three should be retained to form the scaffold branches. Remove branches that grow out below a height of 18 inches from the ground. Bend the branches that remain to an angle of 45 to 65 degrees from vertical using clothespins, toothpicks or small weights. This keeps these branches from growing so strongly that they compete with the leader, and it stimulates flower production.

Stone fruit trees (peaches, plums) are usually trained as open-center (vase-shaped) trees. Two or three side branches are selected, and the remainder of the tree is cut off just above the top branch. Contact your county Extension office for other bulletins on training and pruning fruit trees.

Weed Control

Weeds compete with young trees for water and nutrients. A weed-free zone should be established at the base of the tree that extends out to form a circle with a diameter of two to three feet. Mulch, herbicide or cultivation may be used to prevent weeds.

Growing Apples



Site and Soil Requirements

Sunlight, and plenty of it, is a key to increasing fruit production. Pick an area where the trees will be in the sun most or all of the day. The early morning sun is particularly important because it dries the dew from the leaves thereby reducing the incidence of diseases. If the planting site does not get plenty of sun, then you can't expect the best performance from the tree.

Although apple trees will grow well in a wide range of soil types, a deep soil ranging in texture from a sandy loam to a sandy clay loam is preferred. Apple trees will not thrive in soil that is poorly drained. In areas of poor drainage, roots will die resulting in stunted growth and eventual death of the tree. Conversely, apple trees will also perform poorly on droughty soils. Shoot growth can be stunted and fruit size and quality reduced.

Most fruit plants, including apples, grow best when the soil pH is near 6.5. Since the natural pH of most Georgia soils is below this level, you will need to incorporate lime before planting to raise the pH to the desired level. You can get information on soil testing and liming recommendations from your county extension office. Periodically (about every 3 years) check your soil pH. The soil test report will indicate if additional liming is required.

Soil Preparation and Planting

When fruit trees arrive from the nursery, open the bundles immediately. Soak the roots in water 6 to 12 hours if they are not moist. The trees should then be planted if the soil is not too wet.

If the soil is not prepared where the trees are to be planted, or the ground is too wet, heel the trees in by placing them in an open trench deep enough to cover all roots. The north side of a building is the best place for heeling because the trees will remain dormant longer. Place soil over the roots to the depth they will be planted in your yard.

Before planting, prepare the soil thoroughly by plowing or spading followed by disking or raking to smooth the surface. If you have not adjusted the soil pH to 6.5 previously, liming should be done before you prepare the soil so that the lime will be incorporated. When added to the surface and not plowed in, lime takes years to move down into the soil. Lime an area 10' by 10' where each tree will be planted. Similar to lime, phosphorus moves down through the soil slowly and thus should be incorporated, based on soil test results, along with lime before planting. During planting, dig holes large enough to receive the roots freely without cramping or bending from their natural position. Before planting, cut off all broken or mutilated parts of roots with a sharp knife or pruning shears. Keep root pruning to a minimum. Set the plants at the same depth they grew in the nursery. Work soil in and around the roots. When the hole is half filled, firm the soil with your feet before you finish filling the hole. When the hole is filled, pack the soil firmly. Do not leave a depression around the tree. Also, do not place fertilizer in the planting hole or fertilize immediately after planting. This should only be done after the soil is settled by a drenching rain. When the planting is completed, the graft union should be at least 2 inches above the soil line.

Post-Plant Care

After planting, apply sufficient water to thoroughly soak the soil in the area of the tree roots. This watering will help bring the soil into closer contact with all sides of the roots and eliminate air pockets around the roots.

Keep weeds out of a 3'x 3' area around the tree because they compete with the tree for moisture and nutrients during the growing season. This will also keep mowers away from the trees and reduce trunk damage. Mulching will help control weeds as well as conserve moisture.

Pruning and Training Apple Trees

The day you plant your trees is the day you begin to prune and train for the future production. Too often backyard growers plant apple trees and leave them untended for several years. This neglect causes poor growth and delayed fruiting.

The purpose of pruning a young tree is to control its shape by developing a strong, well-balanced framework of scaffold branches. Remove unwanted branches or cut them back early to avoid the necessity of large cuts in later years. Today, the recommended method of pruning and training is the Central Leader System.

Prune in late winter. Winter pruning of apple trees consists of removing undesirable limbs as well as tipping terminals to encourage branching. Similar pruning can be performed in the summer and is most beneficial if done in early June and early August.



Figure 1

At Planting: Whether you obtain a small unbranched whip or a larger branched tree, it is necessary to prune the tree at planting. Head the unbranched whip back to 24 to 30 inches from the ground (**Figure 1**). This will cause the buds just below the cut to grow and form scaffold branches. If branched 1- or 2-year-old trees are planted, then select four or five lateral branches with wide-angled crotches and that are spaced equidistant around the tree and 2 to 5 inches apart vertically. The selected laterals should be no lower than 18 inches above the ground, and they should be pruned back slightly by cutting off one-fourth of each limb's length.

First Growing Season: When 2 to 3 inches of growth has occurred, begin training the tree. Position wooden spring-type clothes pins between the main branch and the new succulent growth (**Figure 2**). The clothes pin will force the new growth outward and upward thus forming the strong crotch angles needed to support the fruit load in years to come.



Figure 2

One Year Old: A number of branches should have developed after the first growing season, and if they were clothespinned, they should have good, wide crotch angles. The objective now is to develop a strong central leader and framework of scaffold branches. Here we can see the 1-year-old tree before (**Figure 3**) and after (**Figure 4**) pruning. Note that we have left only four scaffold branches spaced around the tree. All the branches left as well as the central leader have been pruned back by about one-fourth. Always make sure the ends of the scaffold branches are below the end of the central leader after they have been pruned back.



Figure 3



Figure 4

Second Growing Season: During the second growing season, develop a second layer of scaffolds on the central leader 24 to 30 inches above the scaffolds you established the year before. Be sure to use the clothespins on new succulent growth, particularly shoots that develop below the central leader pruning cut, so you will develop wide crotch angles. **Figure 5** illustrates a properly trained apple tree in late May of the second growing season.



Figure 5



Figure 6

Two Years Old: The use of limb spreaders can help bring about earlier fruit production, improved tree shape and strong crotch angles. Spreaders can either be short pieces of wood with sharpened nails driven into each end, or sharpened metal rods. Limbs should be spread to a 45 to 60 degree angle but not below a 60 degree angle from the main trunk. Limbs spread wider than 60 have a tendency to produce vigorous suckers along the top-side of the branch and may stop terminal shoot growth. The spreaders will need to remain in place for up to one year until the wood "stiffens up." Figure 6 illustrates a 2-year-old tree after pruning in which metal rods have been used as spreaders. Pruning consists of entirely removing undesirable limbs and, only where necessary, reducing the length of terminal scaffolds by one-fourth. Weaker side limbs should not be pruned unless excessively long, so they can develop flower buds. Excessive and unnecessary pruning will invigorate a tree and delay fruit production.

Figure 7 is a tree approximately 4 years old. Proper training, spreading and pruning have resulted in the development of flower buds that will produce a good crop in the coming season.

Notice that the upper (2nd) set of scaffolds should be shorter than lower (1st) set. The second and any succeeding scaffold layers should always be kept shorter by dormant pruning than the layer below it. A properly trained and pruned central leader tree should conform to roughly a pyramidal (Christmas tree) shape.



Figure 7

Pruning Neglected Apple Trees: Many people will purchase a house where an apple tree was planted on the property several years ago. Often, the previous owner did not take the time to properly prune the tree and the result is similar to **Figure 8**. The tree has become bushy and weak and will produce very poor quality apples. Such a tree requires extensive corrective pruning.

The main objective in pruning such a tree is to try and open up the interior to allow good light penetration. The first step is to remove all the upright, vigorous growing shoots at their base that are shading the interior. As with the young apple trees, it is necessary to select three to five lower scaffold branches with good crotch angles and spaced around the tree. Limbs with poor angles and excess scaffold limbs should be removed at their base. In some cases it is advisable to spread the corrective pruning over two to three seasons. When severe pruning is done in the winter, do not fertilize the trees that spring.

Figure 9 is the same tree after the first season's pruning. The next year, it will be necessary to remove more limbs, especially on the left side. Note that most of the cuts were thinning types; that is, the wood was removed to its base or point of origin. When making these thinning cuts, make sure the cuts are made flush along another limb.

The remaining limbs can be pruned back by one-fourth of their length to a side limb if it is desired to stiffen them. If you don't cut them back, the limbs may bend and/or break under a heavy crop load.



Figure 8



Figure 9

Fertilization

Nitrogen is the most important nutrient needed. Phosphorous and potassium, are needed in relatively large amounts, particularly on young trees. After the trees mature, fertilization with phosphorus and potassium will probably not be required.

To fertilize apple trees the year they are planted, broadcast over a 2-foot circle 1 cup of organic 10-10-10 fertilizer about one month after planting. **Do not put any fertilizer in the hole before planting.** In June following planting, broadcast another cup of 10-10-10 fertilizer around the tree.

In early spring of the second season (when the tree is 1 year old), broadcast 2 cups of 10-10-10 fertilizer over a 3-foot circle. Repeat this again in June.

In succeeding years, follow these guidelines for the different trees:

Standard Trees: Increase the diameter of the broadcast circle and the amount of fertilizer (10-10-10) by 2 cups per year. When the tree is 6 years old and older, only nitrogen fertilizer is needed. Use 4 cups of ammonium nitrate per tree for trees 6 to 8 years old and 6 cups for trees 9 years old and older.

If you severely prune the tree, do not apply any fertilizer that year. If growth is excessive, omit fertilizer for a year or two until growth is reduced to a desirable amount (terminal growth on bearing trees averaging 10 to 15 inches per year).

Caution: When fertilizing, never dump large amounts in a small area. Root burn may result. Also, keep fertilizer 6 inches or more away from the trunk. Always broadcast the fertilizer evenly over the recommended area.

Once the trees begin to bear, use shoot growth to determine if you need to reduce or supplement the fertilization rates previously suggested. Ten to 15 inches of growth are ideal for bearing trees. If growth is more than this, apply less fertilizer. If growth is less, apply a little extra fertilizer the next season.

Annual Fruit Production through Thinning

Apple trees grown under favorable conditions will set more fruit than they can successfully carry to maturity. The removal of excess fruit from the trees is essential to assure satisfactory development of color, shape and size of the apples remaining on the tree. Failure to remove the excess fruit will decrease flower formation for the following year and cause the tree to only produce a crop every other year.

Remove fruit by hand, reducing the apples to one per cluster with fruiting clusters spaced about

every 6 inches along the limb. To remove fruit without damaging the spur or other apples on the spur, hold the stem between the thumb and forefinger and push the fruit from the stem with the other fingers. This method will remove the apple, leaving the stem attached to the spur. The earlier hand-thinning is completed, the more effective it will be. Mid-summer thinning will help improve fruit size, but it will not aid the formation of next year's flower buds. Most of the flower buds for next year are initiated during a **four- to six-week period following full bloom**, so you need to thin before this time.

How to Pick Apples

When picking apples, be careful to avoid injuring the fruit. Remove the apple from the spur by pulling upward and outward while rotating the fruit slightly. On some of the thin, long-stemmed varieties such as Golden Delicious, it may be necessary to firmly place the index finger at the point of attachment of the stem and spur to prevent the spur from breaking. Pick apples with their stems attached to the fruit; otherwise, they will not keep as long.

Diseases and Insects

A grower who produces the best quality fruit controls diseases and insects. Several of these pests damage the tree and fruit.

Diseases common to apples that should be controlled are scab, black rot, bitter rot, alternaria and fire blight. Damaging insects are apple tree borers, red spider mites, scales, aphids and fruit worms.

For more information, check with your county extension agent or visit the [Georgia Cooperative Extension web site](#).

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Courtesy: The University of Georgia Cooperative Extension

Blackberry and Raspberry Cultivation

Building the Trellis For Trailing Berry Plants:

Plant between December and April. Should the plants arrive before you are ready to set them, store them in a cool place (34 to 40 degrees) and do not allow them to dry out. Because blackberry and raspberry plants live for many years, the trellis posts should be treated with preservatives and No. 9 gauge wire should be used. Set 6 ½ to 7-foot posts 1 ½ or 2 feet in the ground 10 to 20 feet apart. Use 3 strands of trellis wire, with the 1st strand at the top and the other strands 18 inches apart.

Setting the Plants:

Plants should be placed in sunny spot. "Trailing" type plants should be set 6 – 8 feet apart in 8 – 12 foot width rows. Set the plants 2 inches deeper than grown in the nursery. Plant erect blackberries 3 feet apart in 12-14 foot wide rows. A pH of 6.0 – 6.5 is best for these berries. The hole must be large enough to accommodate all of the plants roots in a natural position.

Training and Pruning Erect Vines:

The year of planting, canes produced by the plants will be semi-erect. Contain these semi-erect canes to the row area and do not prune them. They will provide some fruit the following year. New canes produced the 2nd and succeeding seasons will be erect. They should be cut to a height of 40-42 inches to encourage lateral shoot development. This practice reduces excessive height of the cane and increases the stability of the hedge. Several prunings may be necessary. During the dormant season, the dead canes that provided fruit the previous summer should be pruned out.

Training and Pruning Trailing Vines:

These plants produce biennial canes which grow one season and flower, fruit and die the second season. New canes are produced each season, so fruiting canes are present annually after the year of planting.

First year pruning: Little pruning is necessary for brambles the year they are planted. Place a mulch of pine straw, hay, newspaper or plastic on the ground around the plants in the summer time to help keep moisture in the ground.

Second Year Pruning: After the fruiting season, remove the old canes that are in the process of dying. Tie the new canes of trailing blackberries to the trellis and tip them 6 inches above the top wire to encourage branching. During the following winter, train the canes in a fan pattern away from the crown and place ties where canes cross each wire.

Fertilization:

Fertilize berries twice a year in most situations. Trailing blackberries and Dorma Red Raspberries should receive about 2 ounces of organic 10-10-10 in April and July of the first year. Scatter the fertilizer evenly over a circle 2 feet in diameter centered on the plant. Erect blackberries and raspberries are usually planted closer together, so a banded fertilizer application can be made from the start. The first year apply one pound of 10-10-10- per 18 feet of rows in April and one pound per 36 feet of row in June. For all berries in future years, apply one pound of 10-10-10 per 9 feet of row in early March and one pound on organic 10-10-10 per 18 feet of row in June in a band 2 feet wide.

Harvesting:

The berries are ripe and are at their peak of flavor when they lose their high glossy shine and turn slightly dull. Harvesting is best when the berries are juiciest, during the late morning hours after the dew has dried.

General Requirements:

Watering: Water brambles during dry parts of the season. Apply enough water to wet the soil at least 8 to 10 inches below the ground surface. This is particularly important for raspberries.

Mulching:

Brambles will benefit from mulching, which prevents extremes in soil temperatures and helps to conserve moisture.

Blueberry Cultivation

Location: Need Full Sunlight and Well-Drained Soil. Plants will tolerate partial shade, but as shade increases, plants produce fewer blossoms and fruit production declines. Avoid areas surrounded by trees, which provide too much shade, compete with plants for water and nutrients, and interfere with air movement around plants. Poor air movement increases danger of spring frost injury to blossoms and favors disease development.

Soil: Blueberries require acid soil with a pH of 4.5 to 4.8. We highly recommend you have your soil checked to ensure the proper pH. You can take a soil sample to your local County Extension Office. If the pH is too high, the growth of the plant is slowed and the foliage turns yellow. If the pH is too high for an extended period of time, the plants will die. Remember: Blueberry plants are long-lived so considerable time and effort in preparing the soil is a wise investment.

When the pH is too high, ground sulfur or ammonia sulfate should be applied to increase the soil acidity. Five hundred pounds of sulfur per acre will change pH of 5.5 to 4.4 in lightly sandy soils. If pH is too low, dolomitic limestone applied at necessary rate will raise the pH. Soil test should be made annually.

Pollination: Rabbiteye varieties do require cross-pollination. They require the transfer of pollen to one variety from a different variety for proper fruit set. The cross-pollination results not only in increased fruit set, but, for many varieties, also in an increase in berry size, seed content, and earlier ripening of berries. We recommend that you have at least 3 different varieties planted to get the maximum fruit set.

Spacing: We recommend a spacing of 4 to 5 feet between plants for hedging but you can go further as needed. Plant rows about 10 feet apart.

Planting Instructions:

Set them out as soon as possible. If you cannot set them within a few days, then heel them in or keep them in cool, moist place and make sure the roots do not dry out.

Planting - When digging the planting hole, remember that blueberry plants have a dense, shallow root system. A wide hole will be more important than a deep one. To prepare the planting hole, dig it deep enough to allow the plant to be placed in it at the same depth as it grew in the nursery (you can often see a soil line on the branches) and wide enough to allow the roots to be spread out completely. Add five to six gallons of soaking wet peat moss to each planting hole and mix it 50-50 with the soil. (You will need to prepare the peat moss prior to planting. Break up the peat bale and wet it with a hose. It is easier to soak it for several days in a tub of water. Once your peat is soaking wet, it will do a good job of holding soil moisture for your plants. Don't ever throw dry peat moss into the planting hole and then try to water it in. The dry peat will actually draw moisture away from your new planted blueberry plant, weakening or possibly killing it.) Make somewhat of a dirt mound in the middle of the hole to set the plant on. Adjust the plant to set at the proper height, spread the roots out fully, and fill the hole back in with the soil. Firm the dirt with the heel of your foot and water it well.

Mulch - Mulch the plants with 4 to 6 inches of pine straw, ground pine bark, or well rotted sawdust. Surface mulch helps maintain uniform soil moisture and will also discourage weed growth. Replenish the mulch as needed. (Note: We do not recommend using leaves, grass clippings and/or layers of newspaper, that mat down and will deprive the blueberry roots of needed oxygen.)

Water - Water the plants frequently enough to keep the soil moist but not saturated.

Blueberries continued

Fertilization – Roots are very sensitive to readily soluble fertilizers and can be injured with excessive amounts. So be sure and do not over fertilize these plants, as it can cause root burn. Plants should be fertilized twice during the first growing season; early March with two ounces of organic 12-4-8. Keep fertilizer at least one foot away from plants in a circle. This should be repeated again in mid-June. Note: Do not use Calcium Nitrate around plants.

Harvesting: To get the highest quality berries, harvest 4 to 6 days after the berry turns completely blue. If picked earlier the berries will not be as large and the flavor will not be as fully developed. Berries picked when not completely ripe will ripen off the bush – but the quality will not be as good as if it ripened on the vine.

Protection From Birds: Birds present one of the worst problems of any pest. They are especially frustrating for the small grower. Nearly any kind of bird will eat your berries. The most effective type of bird control is netting. You can cover individual bushes for nearly 100 percent bird protection. A durable, synthetic netting made of nylon and treated to resist deterioration from ultraviolet rays will usually last for several seasons. Place the netting over the bushes as the first fruits begin to ripen and remove it when harvesting is complete.

Growing Figs



Soil Preparation and Planting

Soil preparation should always include a preplant soil test. If your soil pH is low, adjust the pH to 5.5 to 6.5 with dolomitic limestone. Spread the limestone evenly over the entire area where the figs will be planted, then till the soil. If possible, till at least a 6-foot by 6-foot area where each bush will be planted at least 8 inches deep. Figs grown in the bush form may be set as close as 10 feet apart in the row and 15 feet apart between rows. Figs grown in tree form should be set 15 to 20 feet apart in the row and 20 feet apart between rows. Plant fig trees while they are dormant. In warm areas, bare-rooted trees can be set out in fall or winter.

Before planting a bare-root tree, prune about one-third of its top, unless it was topped by the nursery, spread their roots, and set them in the planting hole.

Set trees in the planting hole 4 inches deeper than they were in the nursery to encourage low branching for bush form. Fill the hole with soil; water heavily enough to settle the soil around the roots. Do not apply fertilizer in the hole at planting.

Training and Pruning

Bush form is generally recommended for most areas. In the bush form, more of the fruit will be closer to ground level and easier to pick.

Begin training to bush form at the time of planting by cutting off one-third of the young plant. This forces shoots to grow from the base of the plant. Let these shoots grow through the first season. Then, late during the winter after the first growing season, select three to eight vigorous, widely spaced shoots to serve as leaders. Remove all other shoots.

Be sure the leaders you select are far enough apart to grow to 3 to 4 inches in diameter without crowding each other. If they are too close together, the leaders cannot grow thick enough to support themselves and their crop, and they tend to fall over or split off under stress of high winds. If this happens, remove the damaged leader and select a new one late the next winter by choosing one of the many suckers that arise annually.

If more branching is desired, head back the bush each spring beginning the second year after planting, after danger of frost is past but before growth has started. Do this by removing about one-third to one-half the length of the last year's growth.

Also, prune all dead wood and remove branches that interfere with the leaders' growth. Cut off low-growing lateral branches and all sucker growth that is not needed to replace broken leaders.

Fertilization and Watering

Fertilizing: Fig trees grow satisfactorily in moderately fertile soils with limited fertilizer. But fertilizer is needed in soils of low fertility or where competition from other plants is heavy. Although nitrogen is usually the only needed plant nutrient, other nutrients may be lacking in some areas. If your soil is not very fertile, follow these general guidelines:

- Use a fertilizer with an analysis of 8-8-8 or 10-10-10.
- Apply fertilizer three times a year to bushes you are trying to bring into full production: early spring, mid-May, and mid-July. Mature bushes can be fertilized just once a year in the early spring.
- Fertilize newly set bushes with about 1½ ounce of fertilizer at each application. Spread the fertilizer evenly over a circle 18" in diameter with the bush in the center. On second-year bushes, increase the amount of fertilizer to 3 ounces at each application and the diameter of the circle to 24".
- On bushes 3 to 5 years old you are trying to bring into full production, apply 1/3 pound per foot of bush height per application. If the fruit are not reaching maturity and ripening properly, excess fertilizer or drought may be the problem; fertilization should be reduced.
- Mature bushes 6 years and older should be fertilized once a year in early spring. On bushes spaced 10 feet apart, apply ½ pound of fertilizer per foot of height, up to 5 pounds per year. On bushes spaced 20 feet apart, apply 1 pound of fertilizer per foot height, up to 10 pounds per year. Scatter the fertilizer evenly under and around the bush. A satisfactory amount of shoot growth for mature plants is about 1 foot per year.

Watering: For highest yields, figs need watering throughout the summer. The frequency and the amount of water depends to a large extent on the soil. As a rule of thumb, 1 to 1½ inches of water per week from rain or irrigation is adequate. Yellowing and dropping of leaves may indicate drought.

In lawns, the grass beneath fig plants may wilt in the heat while the rest of the lawn does not. This indicates the figs need water. Figs grown with lawn grasses may require one or more waterings a week during hot, dry periods.

Mulching: Figs respond well to mulching with organic materials. Mulch may reduce the effects of nematode problems.

If you are attempting to grow figs near the mountains, limited fertilizer should be applied to make the plants as cold hardy as possible.

Courtesy: The University of Georgia Cooperative Extension

Kiwifruit



No minor fruit has received more attention in recent years than the kiwifruit or Chinese gooseberry. It has been planted as an experimental commercial crop in many southeastern states and is available through some garden catalogs. There are two types of kiwifruit, the most common of which is the grocery store or commercial type (*Actindia chinensis* or *A. deliciosa*).

The fruit grows on a vigorous vine with large, nearly round leaves the size of a saucer. The fruit is the size of a hen's egg and is brown on the outside and covered with fuzz. The pulp is green and white with black seeds. The fruit has an acid flavor reminiscent of strawberries and watermelon. The vines are extremely cold-sensitive when young and may be damaged or killed to the ground by early fall freezes or late spring freezes. In midwinter, the vines are about as cold hardy as figs, withstanding temperatures to 10 degrees F.

The second type of kiwifruit is cold hardy enough to be grown in New England. Several species will grow in Georgia, including *Actindia arguta*, *A. kolomikta* and *A. polygama*, but there are few reports of heavy fruit production in Georgia. Most of the named varieties are derived from the *A. arguta* species. The fruit also grows on a vine, but these leaves are pointed and smaller than those of commercial kiwifruit. The fruit is usually green, smaller than commercial kiwifruit and fuzzless. Fruits may be eaten like seedless grapes.

'Hayward' is the major commercial variety of female kiwifruit and has fruited fairly well in Georgia. The 'Bruno' variety has also performed well in Georgia. Several varieties of male flowered commercial kiwifruit are available, but 'Matua' is probably the best in Georgia. Several varieties of cold hardy kiwifruit are available. 'Meader' and 'Anna' (Ananasnaya) are female varieties. 'Issai' is a self-fertile variety from Japan. Male vines may enhance the fruit set of 'Issai,' and the pollen from 'Issai' or male vines is needed for fruit set of the female varieties.

Like muscadine and bunch grapes, kiwifruit produce flowers on current season's growth that sprouts from last year's buds. Male and female vines of commercial kiwifruit must be planted to produce fruit. Usually one male is planted for every eight female vines. There are a few varieties of self-fertile cold hardy kiwifruit, such as the 'Issai' variety, but male vines are usually needed for cold hardy kiwifruit production.

Kiwifruit require careful attention to water management. Irrigation is a must in growing kiwifruit to keep the vines from dying the first year. They are the most drought sensitive fruit grown in Georgia, but they are also one of the most sensitive to overwatering. Kiwifruit grow best on a soil such as a sandy loam or sandy clay loam with good internal drainage. Raised beds are suggested in areas with marginal soil drainage at any time of the year. Adjust soil pH to 6.0 to 6.5 before planting.

Fertilize kiwifruit with 4 ounces of 10-10-10 in March, May and July of the first year. Scatter the fertilizer over a circle 24 inches in diameter around the plant. Increase this amount to 8 ounces the second year and to 1 pound the third year if the plants are growing well. Increase to 2 pounds per application for plants 4 or more years old if they have filled the trellis. Increase the area of fertilizer distribution as the plant grows. Kiwifruit need a strong trellis and require a significant amount of pruning. They may be grown on an overhead arbor (pergola) or on a T-bar trellis (Figure 1).

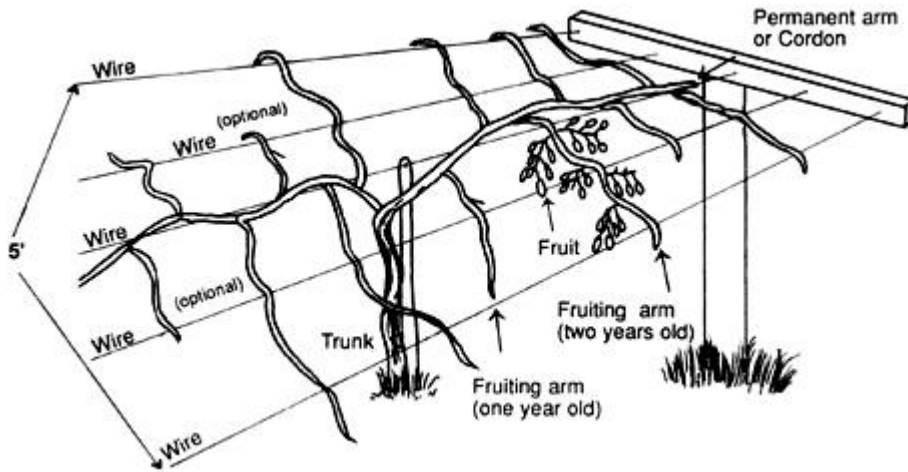


Figure 1: A Horizontal T-Bar Trellis for Kiwifruit

Set plants 8 to 15 feet apart depending on the amount of space available. The trellises should be 15 to 20 feet apart. In training a kiwifruit vine on a T-bar trellis, grow the vine as a single trunk to 6 inches below the wire. Then pinch out the top bud and train one shoot in each direction down the center wire to form a permanent arm or cordon. Kiwifruit have a habit of growing vigorously for several feet and then going into a twining phase. It is best to prune off this growth and allow the next stage of vigorous growth to occur down the wire. Wrap the vine loosely on the center wire as it grows and tie it to the wire with degradable string, tape or cloth.

Allow fruiting arms to develop on both sides every 10 to 14 inches for commercial kiwifruit and every 24 to 30 inches for cold hardy kiwifruit. Allow fruiting arms to grow over the edge of the trellis and, if desired, to trail nearly to the ground. In the following year, the buds on these fruiting arms emerge and fruit is borne on the current season's growth (Figure 2). The next winter, remove the old fruiting arm if a replacement arm has grown. If no replacement arm is available, save the old arm and cut off last year's side shoots at 6 to 8 inches. New kiwifruit growth is very subject to wind damage, so tie new canes to the trellis as soon as possible.

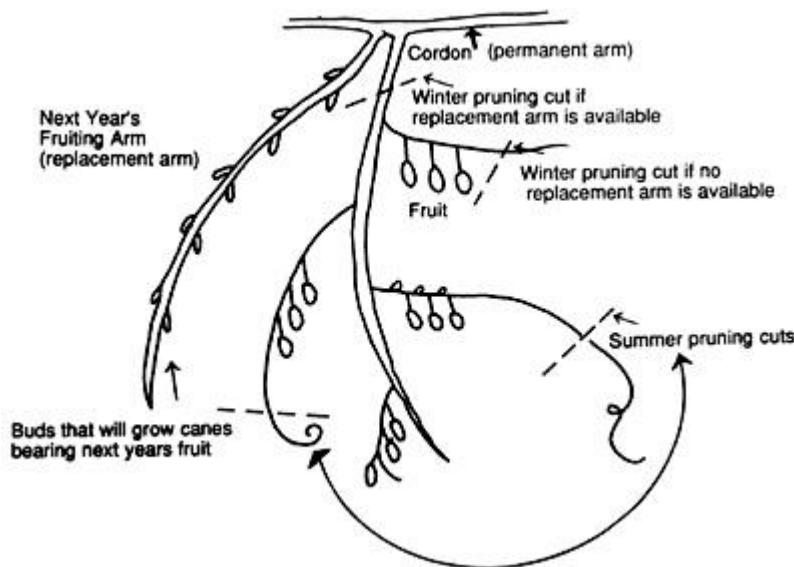


Figure 2: Pruning of Kiwi Fruiting Arms

Kiwifruit can be propagated from cuttings in summer or winter if the right techniques are used. They may also be grown from seed, and budded or grafted to improved varieties. Cuttings are the best choice for commercial kiwifruit to reduce the danger of killing cold. The regrowth will always be true to variety for a cutting.

Kiwifruit have a number of pest problems. Root-knot nematodes are widespread in Georgia and are very destructive to kiwifruit. The home grower should sample his or her soil and plant kiwifruit in an area free of root-knot nematodes. Soil fumigation usually increases growth of kiwifruit and is recommended for the serious grower who is capable of handling the poison gas used in the fumigation process. Root rot of kiwifruit is a serious problem when soils are too wet. Mulching is advised; however, do not use peanut hulls or peanut straw. Peanut litter can carry a root disease that is very destructive to kiwifruit.

Several problem-causing insects have been observed on kiwifruit. Alder flea beetles (tiny, metallic greenish-blue beetles), cucumber beetles and grass-hoppers may feed on the leaves. White peach scale and other scales are known to attack the plants. Deer and rabbits like to feed on the plants, and cats may damage some species of young kiwifruit.

Pawpaws



The pawpaw (*Asimina triloba*) is the only cold hardy species of the "custard apple" family. The paw-paw is a native American fruit with northern growing limits of New York, Michigan and Ontario, Canada. The range extends south to Florida and west to Nebraska and Texas.

Tree pawpaw forms a small tree with a short trunk and spreading branches, forming a rounded crown. Tree height and width at maturity is 15 to 20 feet, and trees will grow to 30 to 40 feet under ideal conditions. Trees tend to send up root suckers, resulting in the formation of a thicket or grove of trees.

Tree pawpaw leaves have a medium green upper surface and a lighter green lower surface. Leaves tend to droop, giving the tree a sleepy appearance.

Flowers are inconspicuous, maroon to purple in color and 1 to 2 inches in diameter. Pawpaws bloom in early May, just as leaves are developing.

Fruit are borne in clusters of one to six, depending on the success of pollination. Fruit size and shape vary greatly. Fruit is from 2 to 6 inches long and is elongated or rounded. Fruit contain numerous medium- to dark-brown seeds resembling elongated lima beans. Seed size varies from pea size to 1 1/4 inches long. Fruit have a very thin green skin, which turns yellowish-black when ripe, like an overripe banana. Fruit ripen from September until frost. After ripening, fruit soften and perish rapidly. The flesh has a rich, sweet custard consistency and a strong nutty banana flavor. Fruit are high in food value, with more than 430 calories per pound.

Pawpaws are relatively free of disease and insects compared to most cultivated fruits.

They do best on fertile, well-drained soils that are slightly acid, and they grow well in full sun or dense shade.