

**"Our Seeds Succeed"**

**Anderson's Seed and Garden, Inc.**

# Grapes

Grapes are an excellent fruit for fresh use or processing into jam, jelly, juice, pie, or wine. In addition, grapevines can be ornamental and valuable as shade or screen plants in the home landscape when trained on a trellis or arbor. Well-grown grapevines of cultivars such as Concord can produce up to 20 pounds or more of the fruit per vine per year. Once established, well-tended grapevines can be productive for 40 years or more. Home fruit gardeners can be successful if they select the right cultivars, maintain a good fertility and pest management program, and properly prune grapevines annually.

Grapes need full sunlight and high temperatures to ripen, so plant on southern slopes, the south side of windbreaks, or the south sides of buildings. Avoid northern slopes and low ground since these will be cooler throughout the growing season, delaying ripening of the fruit. Choose deep, well-drained soils to avoid standing water in the spring and encourage early growth.

## Planting

Plant in the spring as soon as the soil can be worked. Use healthy plants with well-developed root systems. Space the plants six to eight feet apart. Before planting the vine, remove all canes except the most vigorous one. Trim off any broken or excessively long roots. If planting bare-root specimens, soak the roots in water for at least 2 hours before planting. Dig a hole large enough so you can spread the root system out without bending the roots. Plant vines at the same depth as in the nursery. Do not plant too deeply. Spread the roots and cover them completely with soil. After planting, shorten the remaining cane to two strong buds. Each bud will develop into a cane.

During the first year, the vines are normally tied to a stake to keep them off the ground, prevent damage, and make spraying more effective. If the season of planting is dry, supplemental watering is also necessary to keep the vines growing. It is important to get as much first-year growth as possible. Although vines often are allowed to grow at random, sprawling over the ground during the first season, it's best to train the stronger of the two canes that develop from the plant to a strong stake, five to six feet tall. Remove any suckers growing from the base of the canes. Remove the weaker cane in March. If neither cane is three feet long, cut the plant back to two buds again the second year.

Apply nitrogen two weeks after planting at a rate of 10 lb of 16-16-16/100 ft of row. Reapply the same rate annually in early spring, right before growth starts. Fertilizer can be applied to a single plant at a rate of 1 lb/plant. Have the soil tested every three to five years. Do not apply fertilizers containing herbicides (such as some lawn fertilizers) in or near the grapes. Four to six inches of mulch may be applied to help control weeds and conserve soil moistures.

Young grape vines should be planted on well-drained sandy loam soil in February or March. If a heavy clay is the only type available, a 6-inch elevated container can be constructed and filled with commercial potting soil, figure 1. With the roots eventually growing into the existing clay soil, the potting soil will give the vine a strong, early start.

## Harvesting

The first harvest of grapes is usually after two or three years of growth, depending on the vigor of the vines. Pick fruit when they are fully ripe, but not falling off the vine. Varieties vary in their color development at ripeness. They may be green, pink, red, bronze, purple, or black when ripe. Maturing grape berries enlarge, soften, and develop a sugar content of 13 to 22 percent. If the grapes are to be used for wine, they should be picked whenever they reach the sugar content you want. Table grapes are usually picked when they taste sweet. In either case, a "taste test" is the best indicator of when to pick. Harvest fruit during the cooler part of the day by cutting the bunches from the vine with pruners or hand shears. Muscadine grapes are picked individually like other berries. Plan to refrigerate the grapes soon after harvest. They will usually remain in good condition for three to 10 days.

## Problems

Hoing aids in weed and grass control, which is very important in grape care. Chemical herbicides may be used as an aid in weed management, but for most garden plantings their use is not recommended because the grape plants are easily damaged. Mulching with about four inches of straw, sawdust, or pine bark helps control weeds and conserves water. However, mulch may become a home for mice and voles in the winter. To help discourage the mice from feeding on the bark of the vines, pull the mulch back about

**Anderson's Seed and Garden, Inc.**

69 West Center Street  
Logan, UT 84321

Phone: 435-752-2345  
Fax: 435-753-8369

six inches from the vine trunks.

Grapes are susceptible to many diseases and insects. The most notable animal pests are phylloxera, grape leafroller, climbing cutworm, and nematodes. Borers, flea beetles, grape berry moth, various caterpillars, gall-making insects, aphids, mealybugs, and Japanese beetles may be occasional pests. Mites, thrips, leafhoppers, and treehoppers may be important pests because they can transmit diseases, especially viruses, from one vine to another.

Phylloxera, a root louse, is managed by grafting susceptible varieties of grapes onto resistant rootstocks, or by planting resistant varieties. There are many chemical control options for other insect pests. However, homeowners may want to use alternative methods of pest control, including the planting of resistant varieties (where available), using soaps for aphid and spider mite control, specific *Bacillus thuringiensis* preparations for caterpillars, sticky traps for beetles, pheromone ties for grape berry moth, and planting marigolds the year before grapes for nematode control.

There are several diseases of importance to grape growers. Most of the diseases can be treated with fungicides labeled for that purpose. Important fungal grapevine diseases include powdery mildew, downy mildew, and black rot. These diseases usually require several sprays to get adequate control. Grapevines can acquire crown gall disease—a bacterial infection which causes an enlarged area at a wound site or near the base of the trunk, sometimes girdling the vine. This disease is sometimes treatable by pruning out the infected area. Good sanitation practices during pruning help prevent its spread, but will not stop it. Infected plants may need to be completely removed. Diseases may be identified by your county extension agent or the nursery from which you purchased the vines. The most important consideration is to obtain healthy and disease-free plants. Grapevines often show very few visible symptoms of virus disease, but infected plants do poorly and produce little fruit. Therefore, it is important to obtain certified plants from virus-free stock. Choosing virus resistant varieties also may help. Most nurseries have certified disease-free plants available.

A very common disease of grape plants is herbicide injury. Although weed control is important in grape beds, herbicides must be used with care to prevent injury to the grape plants. Hand weeding, where practical, is a good idea.

### **Arbor Pruning and Training**

An arbor is the best way to train grapes for home gardening. A grape arbor can be a family project -its construction, planting of the grape vines, pruning, harvesting and of course, eating the fruit.

At planting, grapes should be pruned back to two buds. Do not prune muscadines. As the vine begins to grow, select the strongest cane and train it up the arbor post, figure 2. All side canes should be tipped to simulate the trunk. During the second and third year, allow one trunk to develop, with all the side canes pruned off as they develop. A single cane should be selected to grow across the arbor to form the cordon.

Grapes can be grown even in very little space. One vine could be used in a cubic yard of soil with a small amount of direct sunlight. A standard arbor as illustrated here could be established in an 8' x 8' area. Larger arbors could be developed as desired. Grapes and muscadines can be grown on an unpruned *natural* arbor or a well pruned *maintained* arbor. Each could be trellised onto the type of structure illustrated in figures 3, 4 and 5.

The *natural* arbor is permitted to grow randomly, forming a thick mass of canes. There is very little upkeep and the vines produce a dense shade. Since the vines are not pruned annually, there would be significantly fewer grapes produced.

The *maintained* arbor is covered by vines which are pruned to a two-bud spur-type cordon, figures 3, 4 and 5. Prune vines in February or March to a single cordon. Each spur should be pruned to contain two or three buds. Figures 3, 4 and 5 show three mature vines pruned to a cordon system. Grapes should be pruned in this manner every year in February or March. Muscadines should be pruned in November or December to reduce bleeding.

#### **First Year**

Build a simple, strong trellis or arbor with one or two wires between posts. This is called a cordon trellis. During training, the trunk (s) and fruiting canes will be attached to the trellis wire with a loop of small rope. If only one wire of the trellis is used to support the fruiting canes, the lower wire may be used to hold a drip irrigation line. Be sure to brace the end posts so that the trellis can bear the weight of fully mature vines loaded with fruit and buffeted by wind. A good brace may be made by placing a strong loop of wire around the post and through a post anchor installed in the ground, and then twisting the wire around itself in the center. During the first growing season, the vines should be allowed to produce as much growth as they can without being trained to the trellis.

#### **Second Year**

The first winter after planting, cut the vine back to one or two healthy canes which arise below (for non-grafted vines) or slightly above (for grafted vines) the ground. If two canes are left and one dies, then the entire plant is not lost. These canes will become the trunks. Cut them back to three or four buds. Hang a durable string from the top wire of the cordon down toward the plant. Use two strings about six inches apart, if you are going to train two trunks. As new growth begins, it will be trained up these strings to the wire. All canes which are pruned off need to be removed from the vineyard to help prevent disease and insect problems.

During the following growing season, allow only the strongest shoot from each trunk to grow. Remove other shoots about once a month. Also remove any flowers or fruit so that the young vine will not be weakened. Train the trunks up the strings until they reach the top wire. If there are two trunks, train one in each direction along the wire, tying them loosely with cotton or hemp string. If there is only one trunk, pinch the end of the shoot and allow it to form two branches to train onto the wire. The shoots trained on the wire are called the fruiting canes.

### Third Year

During the winter, remove all the lateral growth from the trunk and the fruiting canes with hand pruners. The next growing season, allow the vine to grow as much as it can. The vines may be allowed to bear a small amount of fruit this year, if they are strong enough. If you plan to grow fruit this year, you should leave some renewal spurs at pruning time, as described below.

### Fourth Year

During the winter, cut off all the canes except the fruiting canes and two others which originate very near where the trunk meets the wire. These two canes, or renewal spurs, will form the new fruiting canes during the following year. Cut them back to three or four buds each. During the summer, train the main shoot from each of these along the trellis wire and tie them loosely in place. The vines should be in full production this summer.

### Fifth and Following Years

During the winter, remove the old fruiting canes. Cut back all the lateral growth on the new fruiting canes to two or three buds. These spurs will bear fruit the following year. Also remove all the other canes, except for two new renewal spurs. If the vine is weak, leave fewer buds. If the vine is vigorous and produced a good crop, more buds may be left. This part of the art of pruning comes with experience.

### Alternate Head Pruning Method

This one is trained like a tree - a European method to get lots of grapes in a small area. You could go this route from the start - to have them be productive in a limited amount of space. You can also use the heading back method to tame an overgrown neglected vine and reroute it into the cordon method described above.

- in the winter, remove all but 3-6 of the best canes, keeping the ones that are evenly placed around the top of the trunk
- then cut those canes back to 2-4 buds each
- most of the buds will become fruiting spurs next year, but some will grow into new canes
- each year select a few new canes that grew from the spurs or that have appeared directly from the trunk and repeat the cutting back to 2-4 buds process
- as the vine gets older, you can gradually allow more spurs to develop

For an overgrown vine that you would like to train into the cordon method, do the heading back as described above, but go for a flattened form of head pruning. Keep more main canes, at least 6, that are on the same plane, and the ones that will lie flattest against the supports - so that the remaining smaller canes and spurs you leave on it are heading outwards from the main trunk. Select canes that would be the best to tie to the new horizontal supports you put in place, choosing the most pliable, straightest, untangled canes to train out horizontally from this basic form. Prune back to at least 4 buds on each cane to help ensure the vine survives this drastic pruning.

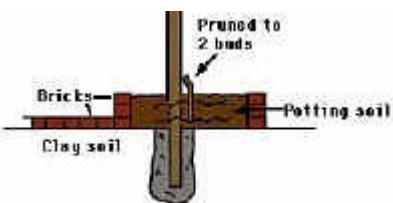
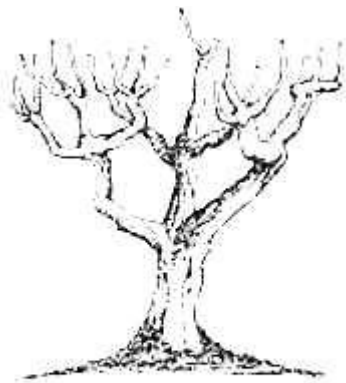


Figure 1. A young grape vine planted in an elevated bed which contains potting soil.



**Head trained.** Cut back the vine in winter to a few spurs—new canes with two to four buds on each.

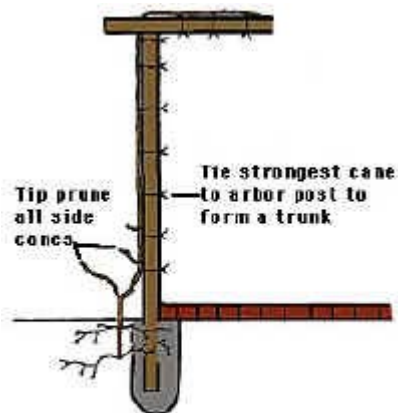


Figure 2. A dormant 1-year-old vine, with the strongest cane selected as a trunk and all side canes tip pruned.

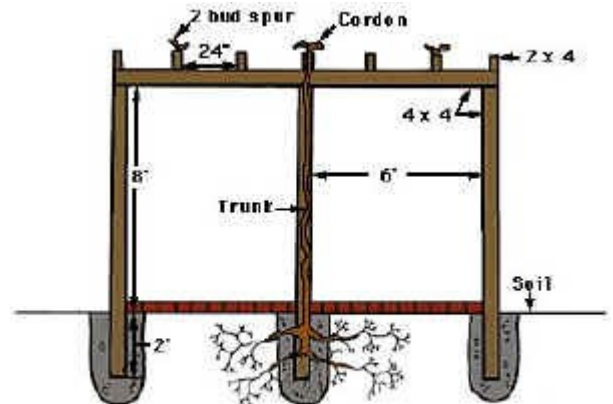


Figure 3. A side view of a grape arbor with a dormant mature vine pruned to an arbor cordon.

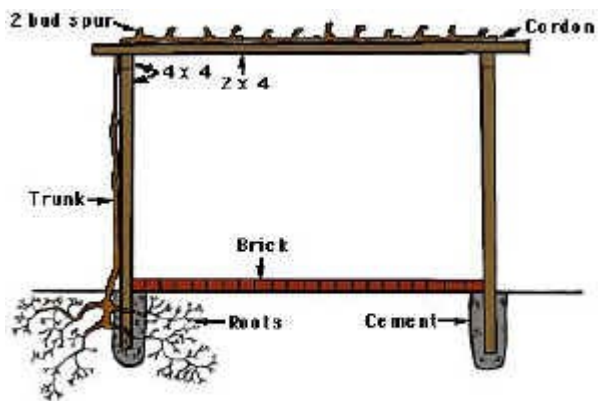


Figure 4. An end view of a grape arbor with a dormant mature vine pruned to an arbor cordon.

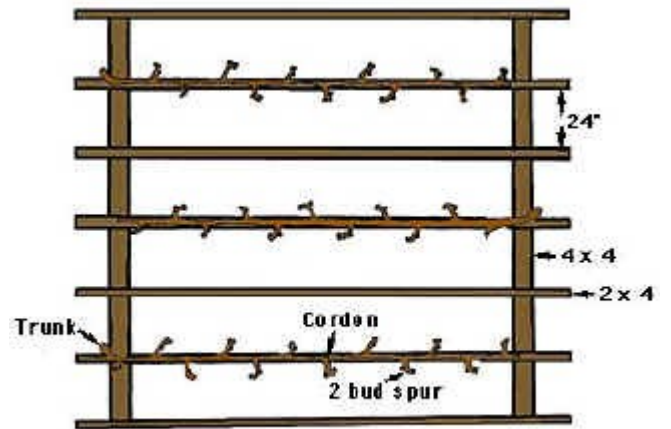


Figure 5. A top view of an arbor cordon pruning system.

