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GROWING GRAPES IN THE HOME FRUIT PLANTING

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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 (Figure 1). A mature and well-maintained grapevine can produce up to 20 pounds or more of fruit per year. Once established, well-tended grapevines can be productive for 40 years or more. Home fruit gardeners can be quite successful if they select the correct site, right cultivars, and appropriate training and trellis system, maintain a good fertility program, follow an effective pest management program and properly prune grapevines annually.

Cultivar Selection

Grape cultivars may be of the American, European or French hybrid types. American and French hybrid types are better suited to Ohio growing conditions because they tend to be more winter-hardy. It is important to select grape cultivars with excellent taste and good disease tolerance. Refer to the Tables 1 through 4 for suggested grape cultivars and their cultural characteristics and disease susceptibility. European grapes are typically not recommended for home plantings since they are not winter-hardy in Ohio, unless home grape growers are willing to provide winter protection.



Figure 1. A beautiful grape arbor at a winery in the Finger Lakes Region in New York. *Photo by Gary Gao, OSU South Centers.*

Table 1: American Cultivars Suggested for Ohio

Cultivar	Color	Winter Hardiness	Ripening Season	Remarks
Concord	Blue	Hardy	Late	Most commonly grown backyard grape.
Fredonia	Blue	Hardy	Mid-season	Earlier Concord, vigorous.
Steuben	Red	Hardy	Midseason	Spicy flavor; non-uniform color.
Catawba	Red	Hardy	Late	Used for wine and sherry.
Delaware	Red	Hardy	Midseason	Used for wine; stores well.

Niagara	White	Hardy	Late Midseason	Used for wine and white juice.
<i>Note: New fruit cultivars that may be superior to currently suggested cultivars are constantly being released. Check with your local Extension educator or the nursery you order plants from to obtain information on newly released cultivars for your location.</i>				

Table 2: Seedless Table Grape Cultivars Suggested for Ohio				
Cultivar	Color	Winter Hardiness	Ripening Season	Remarks
Canadice	Red	Moderately Hardy	Very Early	Productive; good clusters.
Einset	Red	Hardy	Very Early	Slip skin; mild strawberry flavor.
Himrod	White	Moderately Hardy	Very Early	High quality; straggly clusters.
Marquis	White	Hardy	Midseason	Highly productive; high quality; loose clusters, resists cracking.
Mars	Blue	Hardy	Early	High productivity; medium cluster.
Reliance	Red	Hardy	Early Season	High quality; productive; uneven color; susceptible to berry cracking.
Vanessa	Red	Hardy	Midseason	Adherent skin; tight clusters; firm, crisp fresh; small berries.
Jupiter	Blue	Moderately Hardy	Early	Muscat flavor; oval berries; very large.
Neptune	White	Moderately Hardy	Midseason	Compact clusters; low vigor; adherent and thick skin; oval berry.
Suffolk Red	Red	Moderately Hardy	Midseason	Loose clusters; good flavor.
<i>Note: New fruit cultivars that may be superior to currently suggested cultivars are constantly being released. Check with your local Extension educator or the nursery you order plants from to obtain information on newly released cultivars for your location.</i>				

Table 3: French-American Hybrid Cultivars Suggested for Ohio				
Cultivar	Color	Winter Hardiness	Ripening Season	Remarks
Cayuga White	White	Moderately Hardy	Midseason	Fully ripened, produces labrusca character.
Chambourcin	Blue	Moderately Hardy	Late	Moderate vigor; large clusters; needs thinning; high quality wine.
Chancellor	Blue	Hardy	Early Midseason	Fruit thinning necessary; good vigor.
DeChaunac	Blue	Hardy	Midseason	Moderate red wine quality; good vigor and productivity; requires fruit thinning.
Seyval Blanc	White	Hardy	Early Midseason	Moderate vigor; requires thinning; excellent wine quality.
Vidal Blanc	White	Moderately Hardy	Late Midseason	Good vigor; late budbreak, requires thinning; loose clusters; excellent wine quality.
Vignoles	White	Hardy	Midseason	Small tight cluster; moderate yields and vigor.
<i>Note: New fruit cultivars that may be superior to currently suggested cultivars are constantly being released. Check with your local Extension educator or the nursery you order plants from to obtain information on newly released cultivars for your location.</i>				

Depending on the cultivars selected, grapevines will produce berries that may be red, blue, white (greenish-yellow), purple or black with a distinctive flavor. Both seeded and seedless types are now available. In Ohio,

the earliest cultivars ripen beginning about mid-August, while the latest cultivars ripen fruit from late September to early October.

By selecting and planting different cultivars in the home planting, the gardener can spread the harvest over several weeks. However, if interested in planting only a few vines or even an isolated single vine, the gardener may do so without worrying about the necessity of planting different cultivars. Grapevines available to gardeners are self-pollinated or self-fruitful. Bees are not required for pollination.

Disease tolerance is another important factor to consider since wet springs, and hot and humid summers tend to favor common diseases that attack grapes. Try to select grape cultivars that are least susceptible to diseases (Table 4). However, there are no grape cultivars that are truly disease resistant.

Planting

Early spring is the best time to plant grapevines. Fall planting is not recommended because plants are likely to be lost to heaving during the first winter. During the first year, the soil is prepared for planting, cultivars are selected, and vines are planted, mulched, fertilized and kept free of weeds, insects and diseases. Prune off broken or dead portions of branches and roots. At the same time, prune top growth to a single 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 a good amount of growth during the first year.

Establishment

Three years are normally required to establish a grape planting. Vines planted for training on a trellis are normally placed 8 feet apart, while those planted for training on an arbor can be placed 4 feet apart. Before growth begins the second year, a support for the vines, either a trellis or an arbor, must be provided. Care of vines the second year is similar to that of the first year. However, during the second season, a system for training the vines should be selected.

Cultivar	Black Rot	Downy Mildew	Powdery Mildew	Botrytis
Canadice	***	**	*	**
Catawba	***	***	**	*
Cayuga White	*	**	*	*
Chambourcin	***	**	*	**
Chancellor	*	***	***	*
Concord	***	*	**	*
DeChaunac	*	**	**	*
Delaware	**	***	**	*
Einset	***	**	***	*
Fredonia	**	***	**	*
Himrod	**	*	**	*
Jupiter	**	*	***	*
Marquis	*	***	*	*
Mars	*	*	*	*
Neptune	?	?	?	?
Niagara	***	***	**	*
Reliance	***	***	**	*
Seyval Blanc	**	**	***	***
Steuben	**	*	*	*
Suffolk Red	?	?	?	?
Vanessa	***	**	**	*
Vidal Blanc	*	**	***	*
Vignoles	*	**	***	***

Key to ratings: * = slightly susceptible or sensitive; ** = moderately susceptible or sensitive; *** = highly susceptible or sensitive; ? = relative susceptibility or sensitivity not established; (1) = berries not susceptible.

Vines are trained to a particular system by pruning and tying the canes to the support system. In some methods of training grapevines, the canes are tied to wires above the trunk and arms of the vines. Such training works well where grapevines are to be grown on a fence or in an upright position. In another method of training, the canes are tied to the wires and the fruit bearing shoots are allowed to droop or hang down. A third method is the cordon type training system. Here the fruiting canes are developed from a horizontal extension of the trunk called a cordon. If canes are pruned long, they can be tied to the lower wires. If pruned short, they hang free. One of the most common training systems is called the single curtain/cordon bilateral system (Figures 2 through 4).

Pruning and Training

Annual pruning is important in maintaining a uniform yearly production of quality fruit. The best time to prune grapevines is in the dormant season after the danger of severe cold weather has passed. In Ohio, this is usually in March. Learning to prune grapevines requires practice and experience.

When pruning grapevines, it is important to think about fruiting canes for the coming year and renewal canes for the year after. Longer canes will likely produce fruits while one-bud or two-bud spurs will likely produce long shoots without fruit clusters. These spurs are called renewal spurs and will serve as the fruiting canes during the third year. Grapevine pruning is a constant fruiting and renewal. Gardeners should cut all long canes back to five buds first. Leave a ½-inch stub when making pruning cuts. Then prune every other five-bud cane back to one or two buds. Mature grapevines before and after pruning can look quite different (Figures 3, 4).



Figure 2. Shown here are the grapevines trained to the single curtain/cordon bilateral system during the fruit harvest season when the rows are covered with bird netting. *Photo by Gary Gao, OSU South Centers.*

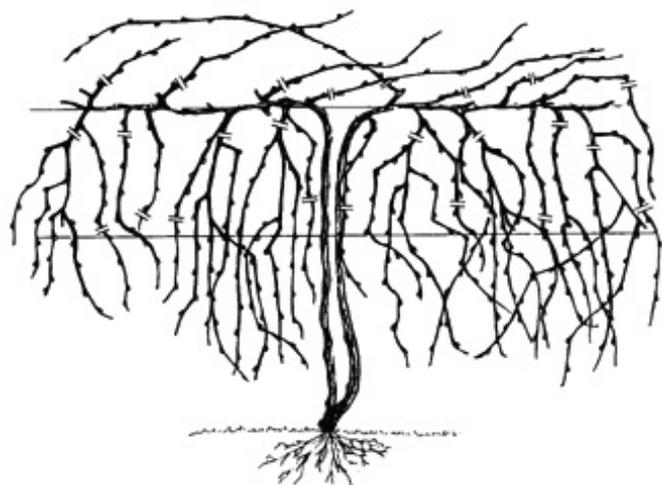


Figure 3. Shown here is a mature grapevine before pruning. Please note the locations where suggested pruning cuts are made.

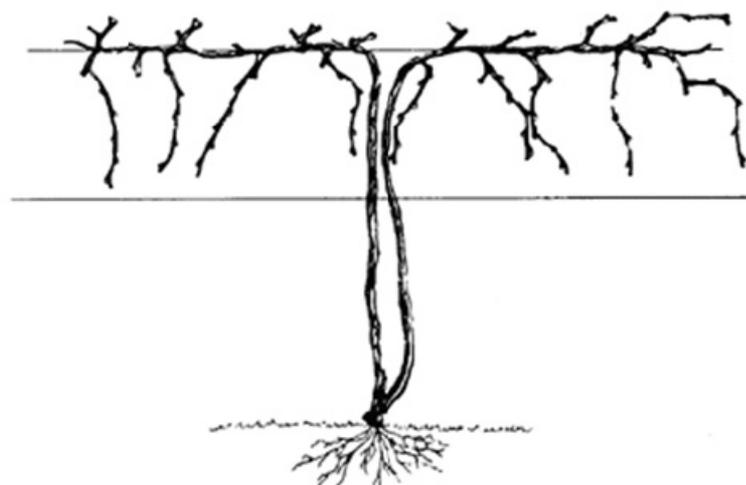


Figure 4. Grapevines trained to single cordon bilateral system.

The line drawings are provided by the CFAES Marketing and Communications through Ohio Agricultural Research and Development Center.

It is beyond the scope of this fact sheet to describe grapevine pruning in detail. Gardeners should refer to the OSU Extension Bulletin 940, *Midwest Home Fruit Production Guide* and OSU Extension Bulletin 919, *Midwest*

Grape Production Guide, for additional information on pruning and other cultural management practices. Both bulletins can be purchased from your local Extension office or OSU Extension's eStore (estore.osu-extension.org/). Gardeners should also attend training programs on grape pruning. Nothing beats the hands-on training when it comes to grapevine pruning!

Fertilizer and Lime

Gardeners are encouraged to do a soil test of the potential site for their grape planting for fertilizer and lime (or sulfur) recommendations. Grapes typically perform best where the soil pH is between 5.0 and 6.0. Apply lime only when soil analysis indicates a need. Commonly suggested rate of fertilizer application in a grape planting is 8 ounces of 10-10-10 fertilizer per plant seven days after planting. Increase the amount of fertilizer to 1 pound of 10-10-10 in the second year and 1.5 pounds per vine in the third and later years about 30 days before new growth begins in the spring. Do not concentrate fertilizer at the base of the trunk. Keep fertilizer 6 to 12 inches from the trunk and spread evenly under the spread of the vine.

During the third season, some harvest may be expected from the vines. The first full crop, however, will not be produced until about the fourth or fifth year. It is important that cultural practices of maintaining soil fertility, weed control, soil moisture conservation, and insect and disease control be continued not only during the third year, but in subsequent years as well. Control weeds by hand hoeing or with plastic or organic mulch. A clean area 1.5 to 2 feet on each side of the vine is necessary. Do not damage trunks with a hoe or chemicals.

Pest Management

Grapes certainly have their share of insects, mites and diseases. Selecting disease tolerant cultivars, good sanitation practices, managing vine canopies for good air movement, pest scouting, and an effective spray program are all part of a successful pest management program. Common grape diseases are black rot, downy mildew, powdery mildew, phomopsis cane and leaf spot, and botrytis bunch rot or gray rot. Major insects and mites on grapes are grape berry moth, Japanese beetle, grape flea beetle, European red mite, grape root borer and grape phylloxera. Refer to OSU Extension Bulletin 780, *Controlling Disease and Insects in Home Fruit Plantings*, for more information. There are also fact sheets available on the management of selected grape diseases and insects. Gardeners are also encouraged to purchase a copy of the OSU Extension Bulletin 940, *Midwest Home Fruit Production Guide*, for additional information.

Summary

Home fruit growers can have a great deal of success with grape production if they know what is involved and are willing to do the work. It is also a very rewarding experience to be able to grow your personal favorite grapes that are not available in grocery stores or farmers markets. In addition, home grape growers will get a greater appreciation for high quality grapes produced by commercial grape growers in Ohio and beyond.

Useful References

- Dami, I., B. Bordelon, D. Ferree, M. Brown, M. Ellis, R. Williams, D. Doohan. 2005. Ohio State University Extension Bulletin 919, *Midwest Grape Production Guide*. The Ohio State University, Columbus, Ohio.
- Ellis, M, and C. Welty. 2010. OSU Extension Bulletin 780, *Controlling Disease and Insects in Home Fruit Plantings*. The Ohio State University, Columbus, Ohio.
- Gao, G., R. Becker, M. Brown, M. Ellis, S. Prochaska, C. Welty, and R. Williams. 2017. Ohio State University Extension Bulletin 940, *Midwest Home Fruit Production Guide*. The Ohio State University, Columbus, Ohio.

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