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Basic Principles of Pruning Backyard Grapevines

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Introduction

Growing grapes has been a long tradition in many home gardens. Gardeners truly enjoy the fresh taste of homegrown grapes; however, the work to maintain grapevines can be a challenge. As with other fruit crops, grapevines need weeding, fertilizing, insect and disease control, and proper pruning to assure a bountiful harvest. For more information about homegrown grapes, refer to the OSU Extension Fact Sheet HYG-1423-98, *Growing Grapes in the Home Fruit Planting* at **http://ohioline.osu.edu/hyg-fact/1000/1423.html.**

Proper training of grapevines is essential to maintain plant size, shape, and productivity. If left unattended, grapevines can become unruly, and fruiting will be poor due to overproduction of vegetation. This fact sheet is intended to help home gardeners gain a better understanding of the principles of grapevine pruning and the selection of training systems. Refer to the glossary of terms (on the last page) if you are not familiar with some of the terms used in this fact sheet.

In the first two years, it is important to determine what training system to use and prune grapevines accordingly. When the vines are mature, pruning can involve dealing with a considerable amount of vegetation. This will require some skill to properly prune, effectively manage the foliage, and maintain adequate fruit production year after year. Additionally, the variety of grapes and the trellis or arbor system used will determine the extent of pruning that is required.

What kind of training system should I choose?

Selection of a training system definitely determines how you would prune your grapevines. Many gardeners prefer the high cordon system (Figure 1a) since it is relatively simple to establish and maintain where others like to incorporate a grape arbor into their landscape. Young vines are carefully trained to either one or two trunks. The fruiting area is established as either head-trained (Figure 1b) with canes (hardened-off shoots), permanent cordons (horizontal arms) with dormant canes pruned back as spurs, or a fan-shaped arrangement on top of a four-post arbor structure.

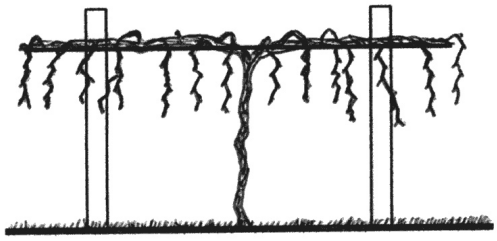

Figure 1a. Bilateral high cordon system.

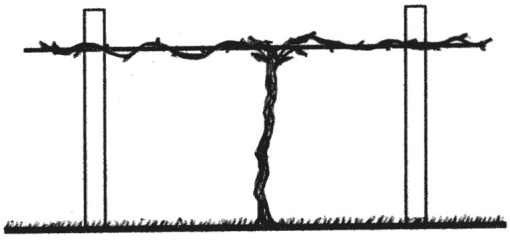

Figure 1b. Head-trained system.

In a cane-trained system, new canes are laid down each season. Grapevines under this system are generally head-trained at the top wire. New shoots that are produced during the growing season harden-off as canes with a reddish-brown color and will be approximately pencil size in diameter. Two of these canes are selected and tied down to the top wire; one cane is laid down in each direction. Canes can be tied using pieces of cloth, twist ties, or plastic stretch tape. Buds are counted and the number is adjusted according to the desired fruit load.

Cordon-trained systems are different in that new spurs are established each growing season as one-year-old canes and are pruned back to three to four buds per spur. When growing grapevines on an arbor, the fruiting wood may be either one-year-old canes or spurs that are attached to cordons positioned on top of the arbor.

Do I prune American, French-American Hybrid, and Vinifera varieties differently?

Pruning practices vary a great deal based on the type of grapes grown. American and French-American hybrid varieties are more commonly grown in home gardens than Vinifera varieties since they are more winter hardy and disease resistant. Vinifera varieties tend to be grown by more advanced grape gardeners.

American, French-American hybrid, and Vinifera varieties differ in the amount of fruiting wood that is produced annually. American cultivars tend to have the greatest amount of vegetative growth followed by French-American hybrid varieties. Vinifera varieties have the least amount of foliage.

The amount of one-year-old wood to be left after pruning is dependent on the amount of vegetation produced during the previous growing season. The 30+10+10 balanced pruning system can be used to determine the number of buds to retain on the vine based on the weight of one-year-old wood pruned off.

For example, a vine that has three pounds of wood pruned off will have 30 buds left for the first pound and 10 buds left for each of the second and third pounds of wood. A total of 50 buds will be retained. If more than three pounds of wood were produced in the previous growing season, additional buds would need to be retained to help balance the crop load.

A grapevine will over-compensate with increased foliage if there is not a proper amount of fruit load to store carbohydrates produced in the leaves. If the appropriate number of clusters is left on a grapevine, there should not be a lot of excess foliage produced.

What is shoot positioning?

Grapevines that have not been pruned can appear to be quite tangled unless the gardener has carefully "combed" (shoot positioned) the vegetation during the growing season. Shoot positioning results in high-quality fruit, better buds for next year's crop, reduced number of shoots that are tangled, improved sunlight exposure, and more air circulation.

As Figure 2 shows, a non-combed vine will have several one-year-old canes trailing in different directions. In Figure 3, the combed vine is much neater, easier to prune, and will produce better fruit and canes.

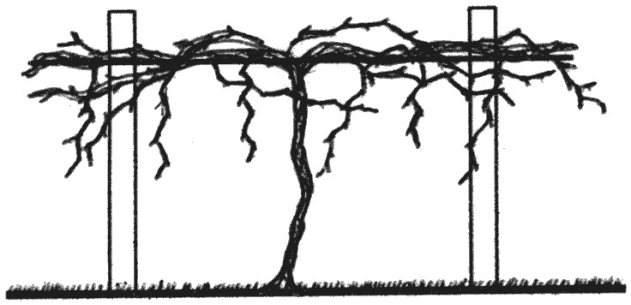

Figure 2. Non-shoot-positioned grapevines.

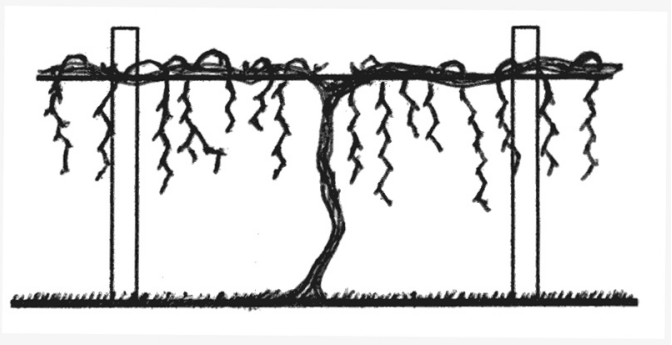

Figure 3. Shoot-positioned grapevines.

How do I properly prune grapevines?

All one-year-old canes that grew along the cordon will be pruned back to either three- to five-node spurs as fruiting wood or one-node renewal spurs as vegetative wood. The cut end of the spur should measure at least pencil size in diameter. Renewal spurs produce vegetative shoots that are used for the following year's fruiting wood. Grapevines are normally considered to be mature and fully productive in year three. Dormant pruning should be completed starting in late February through March. One-year-old wood (the previous summer's growth) should be pruned back to three to five nodes per spur. The spurs should be evenly spaced along the cordon.

To determine how many buds to retain for fruiting will depend on how much vegetative growth occurred the previous year. You may use different approaches for determining the number of fruiting buds. With any pruning system, at least 85 to 90 percent of the one-year-old wood will be removed during dormant pruning. This will allow the grapevines to maintain their structure (shape), distribute fruit load along the cordons, and enhance fruit quality. On three-year-old (or older) vines, approximately 40 to 50 buds will be kept.

What are the tools used for pruning?

Hand tools such as loppers, hand pruners, and handsaws can be used to effectively remove all undesired wood from grapevines. Select the appropriate tool to remove wood as cleanly as possible to avoid unnecessary injury to the plant. Hand pruners can be used to effectively remove one-year-old wood. If the wood

is two- or three-years-old, it is suggested that a lopper or saw be used to cut through the heavier wood.

Summary

Learning to master the art and science of grapevine pruning takes time and practice. Contact your county Extension agent for updated information on pruning. Make sure your grapevines are pruned each year to maintain the size and shape of the grapevines, maximize fruit production, and increase the overall fruit quality.

Glossary of Pruning Terms

Cane: A green summer shoot matures (hardens off) into a woody, brown one-year-old cane after leaf fall.

Cordon: A permanent extension of the grapevine's trunk that is horizontally positioned along the trellis (arbor) wire.

Fruiting Wood: One-year-old wood that produces the current season's shoots and fruit.

Node: The thickened portion of a shoot or cane where the leaf petiole is attached and a compound bud is located.

Pruning: Removal of portions of a grapevine for the purpose of maintaining size, shape, and productivity.

Renewal Spur: A cane pruned to one node with the primary purpose of producing a vegetative shoot (cane) for next year's fruiting wood.

Shoot: The green, leafy growth that develops from the compound bud that normally produces fruit clusters.

Spur: A cane pruned to three to five fruiting nodes to produce shoots bearing fruit clusters.

Trunk: The main, upright structure(s) of the grapevine from which cordons, shoots, and canes arise.

Useful References

Ohio State University Extension Bulletin 591: *Growing and Using Fruits at Home*.

Ohio State University Extension Bulletin 815: *Grapes — Production, Management, and Marketing*.

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