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Grapes Belong In Your Backyard

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More grapes are grown in the United States — and also worldwide — than any other deciduous fruit. They are grown for fresh fruit and for processing into unfermented juice, jams, jellies, frozen products and wine.

Variety Selection

Two classes of grapes can be grown in Idaho — European varieties and American/American hybrid varieties.

The European varieties are the most important grapes of commerce. Included in this group, which belongs to the species *Vitis vinifera*, are the wine grapes of Europe and California and table grapes such as Tokay and Thompson Seedless. Thompson Seedless is the most popular white table grape and is also the principal raisin grape. Vinifera grapes have a relatively thick skin which adheres to a firm pulp. They require a long, warm growing season to mature quality fruit. The entire plant is easily killed by low winter temperatures. Vinifera grapes can be grown with moderate success in only a few sites in Idaho, primarily in the Weiser-Caldwell area and in portions of the Clearwater River drainage.

The American and American hybrid varieties can be grown successfully in many sections of Idaho. The American grapes belong to the species *Vitis labrusca* and are sometimes called the Fox grapes. They include Concord (blue) which is the best-known variety, Delaware (red) and Golden Muscat (white). Concord is the juice and jelly grape. The skin of labrusca grapes does not adhere to the pulp and is called slip skin. The American grape is the most winter-hardy of those discussed here. It will withstand midwinter temperatures of -20°F.

American hybrid varieties are the result of crossing American and European grapes. Introduced by the New York Experiment Station, American hybrids include Interlaken and Himrod, both white and sweet with a skin that adheres to the pulp. They may be eaten fresh or dried for raisins. They are intermediate in freeze hardiness. A midwinter temperature of -20°F could reduce the crop by 50 percent.

A good balance for the home vineyard in most areas of Idaho would be Concord for juice and jelly and Interlaken or Himrod for table use and raisins. To ensure a reasonable chance of success, prospective home grape growers should consult the Idaho Extension Bulletin 300, *Fruit Varieties for Idaho*, before selecting grape varieties. To get quality fruit, choose a variety that fits your climate, then train the plant carefully and prune it regularly.

Site Selection

Home vineyard site location is important and will involve compromises, a few of which are presented here. Areas close to dwellings, especially those on the south or southwest side, are protected so winter temperatures are generally more moderate than in areas not protected, thereby minimizing the chances of vine kill. However, grapevines close to the house may not complement the landscape design. Maximum exposure to sunlight is desirable for growing quality grapes. Best exposures are gentle slopes to the south or southwest, with the grape trellis built in an east-west direction. Here again, desired slope and trellis direction may run counter to the landscaping plan.

If grapes are planted in the lawn, additional problems arise. Grape irrigation should be reduced in late summer and fall to ensure that vines harden off properly so winter damage will be kept at a minimum. However, late summer/early fall weather is conducive to good lawn growth, and lawns should be watered more fre-

quently than hardening-off grapes. Either the grapes or lawn will be favored.

Grapes are also sensitive to 2,4-D, a herbicide that many homeowners use to control broadleaf weeds in lawns. If you plant grapes in or near a lawn, observe the following precautions. Plant the grapes in the direction of the prevailing wind with respect to the lawn area and, if possible, in the highest area of a sloping yard. If you use 2,4-D in the vicinity of grapes, spray in late afternoon or evening to keep volatilization and drift to a minimum.

If late summer and fall precipitation is minimal and soils become dry, you will need to irrigate the grapes just before the ground freezes to minimize winter injury from dessication.

Preparing for Planting

Ideally, you should construct the trellis before planting rooted grape cuttings. Select sturdy posts long enough to allow each one to stick 55 to 65 inches above the ground when firmly anchored. Treat the lower end of the posts to inhibit rotting and place them about 15 feet apart. Then attach staples on the windward side of the posts 36 to 46 inches above ground level (Fig. 1A), and thread a No. 9 or 10 gauge galvanized wire through them. The staples are placed on the windward side of the posts to minimize the chances of a strong wind tearing a heavily laden grapevine and wire from the post.

Use staples large enough to support the wire plus the fruit-laden vine without pinching down on the wire. Lateral movement of the wire must not be restricted. Attach the wire with turnbuckles so it can be loosened with the onset of cold weather and tightened each spring. You can add the second wire 55 to 65 inches above ground level any time before the developing trunk of the grape plant grows above the lowest wire. Again, place the staples on the windward side of the post and use turnbuckles so you can tighten and loosen the wire as needed.

Grapes are grown on their own roots in Idaho. No benefits, such as additional insect or disease resistance, can be gained by grafting the desired grape to a different root. Gathering cuttings and inducing them to root is a simple procedure that requires no special equipment. In late winter or early spring, when mature vineyards are being pruned, select pruned-off canes that are 5/16 inch in diameter — about as thick as a pencil — and cut them into 3-bud sections. Make angle cuts through the lowest bud and about 1 inch above the top bud. Bury bundles of 10 or so bud sticks upside down in a well drained soil. Completely cover the bundles with 4 to 6 inches of soil and 6 inches of straw. Mark the location with a stake.

When the weather warms, about the first week of May, dig up the bundle of grape cuttings. The lower cut through the bud should be well callused. Plant the cuttings about 8 feet apart below the prepared trellis. Plant the cuttings right side up, with the uppermost bud at the soil surface. Take care not to damage the buds as you plant them. Do not fertilize.

If you prefer to buy rooted grapevines rather than rooting your own, prune the plant back to 2 buds on 1 cane after planting.

Training and Pruning

The system of training and pruning described and shown here is called the 4-cane, single-trunk Kniffin system. This is not the only method of training and pruning American or American hybrid grapevines, but it is a tried and true system that will produce large quantities of quality grapes in a small area. European wine grapes are not trained to the Kniffin system.

The newly planted grape cutting will develop several canes in the weeks following planting. Pinch off all but one and tie this selected cane to a stake, one end of which has been pressed into the ground and the other tied to the lower wire of the trellis. An old broom handle works well as the stake.

The selected cane will form the trunk of the grapevine. When this cane reaches the lower wire, pinch out the terminal bud (Fig. 1). This forces several buds near the top of the single cane to develop into branches. Select two of these branches 2 to 4 inches below the lower wire. Train one to the right and one to the left along the wire (Fig. 1B). Also select a third cane to continue the vertical growth toward the upper wire. Pinch off all other branches which appear.

When the vertically growing cane reaches the top wire, again pinch out the terminal bud (Fig. 1B). Select two of the branches that are immediately below the top wire and train one to the right and one to the left along the wire. This process of selecting four "arms" will probably take two growing seasons; however, adhere to the plan and allow no other branches to develop.

In mid-March of the first dormant season when all four canes are in place along the wires, prune the two lower "arms" so that 4 to 6 buds remain on each, and prune the two upper arms to leave only 3 to 5 buds on each (Fig. 1C). Allow the grape plant to bear fruit without pruning during the ensuing growing season. Then late in the following dormant season, prune each of the four "arms" as follows:

Select two canes originating close to the trunk. Cut one back to approximately 10 buds and the other to 2 buds. The 10-bud cane will produce fruit during the coming growing season and the 2-bud cane will be the renewal spur. The two canes arising from the buds on the renewal spur again should be pruned in mid-March of the following year to leave a 10-bud fruiting cane and a 2-bud renewal spur (Fig. 1D). Leaving more buds is a serious mistake. It causes the plant to produce too many berries. This in turn limits the plant's ability to build up food reserves which may lead to winter injury. Too many berries may also reduce the amount of sugar in the individual fruit.

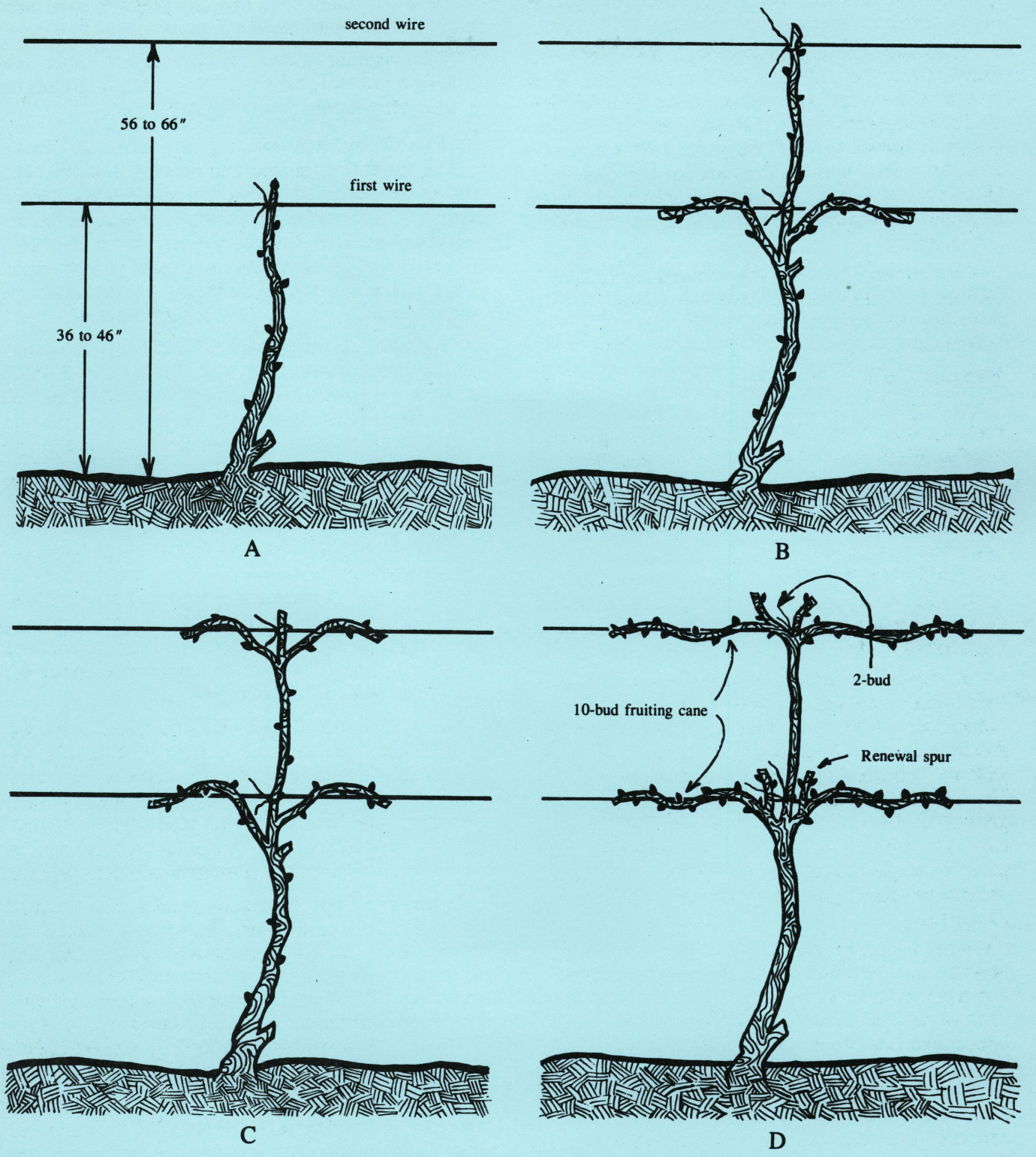

Fig. 1. Steps in training a grape plant to the 4-cane, single trunk Kniffin system. The stages A, B, C and D are identified in the text.

If a grape arbor is your goal, the single-trunk Kniffin system of pruning, with two arms at each support lattice and 30 inches between supports, will yield a maximum amount of high-quality fruit.

Fertilizer and Frost Protection

The addition of fertilizers to grapes will depend on need so pay careful attention to foliar symptoms. Nitrogen may be limiting in Idaho soils. Low nitrogen lev-

els will result in poor vigor, low yields, light green foliage and small leaves. When vines show a need for nitrogen, distribute about 3.5 ounces of ammonium sulfate per vine evenly in a 2-foot circle on the soil around the trunk. Don't over-fertilize. Too much nitrogen will delay maturity, increase the risk of winter injury and produce excessive vegetative growth.

Iron is another mineral that may be unavailable to the grape especially in the southern, arid sections of Idaho. Iron deficiencies will result in leaves with green veins and yellow interveinal areas. In more severe cases, the vine will have entirely yellow, small leaves which will turn brown at the edges (necrotic) and then become completely brown. Iron problems can be corrected with a single spring application of a synthetic iron chelate manufactured for the soil in question, either acid or basic. Dissolve the recommended amount of chelate in water and apply to the soil at the trunk. Follow the instructions on the label. Excessive irrigation, especially in the spring, will aggravate the problem of iron availability.

Buds, flowers and small fruit may be killed by spring frosts. The best method to minimize this damage is to sprinkle the vines with water when temperatures are critical. A conventional lawn sprinkler will do the job. The buds are protected by the release of heat during ice formation so the sprinklers should be turned on when the temperature gets down to 34°F and sprinkling should continue until all the ice melts. Shoot tips and flower clusters are damaged at 32°F. A small amount of cooling will occur when the sprinkler is turned on so the 2 degrees from 34 to 32 provide a buffer or safety zone.

The time of fruit harvest will depend on intended use. For jelly, the fruit should be harvested somewhat early to avoid sugar crystals which may cloud the product. For table use, the fruit should be picked when color and flavor are at their peak and before the fruit shatters from the bunch. For juice, the fruit should be left on the vine until fully mature.

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