

The Bunch Grape¹

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Bunch grapes were raised in Florida many years ago, but the industry was devastated by Pierce's disease. Only with the recent development of disease-resistant varieties adapted to Florida's warm humid climate have bunch grapes been grown successfully in Florida.

VARIETIES

The University of Florida's Agricultural Research Center at Leesburg has had an active breeding program for bunch grapes since 1945, resulting in the development of several bunch grape varieties.

The principal cause of poor results with bunch grapes in Florida is poor choice of varieties. There are only 9 varieties currently recommended that have adequate disease resistance to do well in Florida. They are best suited for the purposes seen in Table 1.

All the varieties are self-fertile, so will bear full crops without another variety as pollinizer. Conquistador, Orlando Seedless, Black Spanish and Stover require grafting on Tampa or Dog Ridge rootstocks for satisfactory growth and yields. The other varieties do not require grafting except in areas where the soil pH normally exceeds 7.0. Dog Ridge is

the best rootstock to graft them on under alkaline soil conditions.

Liberty, formerly recommended, has given problems with Pierce's disease and uneven ripening of berries on the bunch. Roucaneuf, also formerly recommended, has lacked fruit quality in comparison to the recommended bunch grapes. Black Spanish, though resistant to Pierce's disease, has low sugar:acid balance. Norris has fruit cracking and anthracnose, so is not recommended despite its resistance to Pierce's disease.

A preventive spray program to control fungus diseases is important on all these cultivars. Insect control can be achieved by adding insecticides to the spray tank as the insects appear in the vineyard.

PROPAGATION AND PLANTING

Rooted grape nursery stock is customarily produced from cuttings made in January from 9 or 10-month-old wood. Canes used for hardwood cuttings should be about 12 inches long, with two or more buds, pencil sized or a little larger in diameter, fairly straight, with green wood throughout their length. The bottom cut should be just below the

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lowest bud and the top cut 1 inch or more above the top bud. The cuttings should be tied tightly in bundles of 50 or less with the bottom ends cut evenly. A cool, shady location should be chosen for the callusing bed. A trench should be dug slightly deeper than the length of the cuttings. The bundles should be placed in an inverted position in one trench and have soil packed firmly around them. Additional soil should be used to provide about 3 inches of cover over the entire bed. Cuttings placed in a bed of this type will callus and start roots in about 6 weeks.

The nursery site should be in a moist location or where water is available. Nursery rows should be far enough apart to accommodate a tractor, and callused cuttings should be set right side up about 9 inches apart in the row. Cuttings should be set with almost the entire length covered with soil and kept moist until they are growing rapidly. Plants will be ready for digging the following winter.

Some bunch grape varieties such as 'Stover' are more productive when grafted on a rootstock. Although several methods of grafting or budding are possible, the cleft graft on one-year-old rootstocks made either in the nursery or in the field is recommended.

Grafting in Central Florida should be done around February 1. The rootstocks should be cut off with a saw or sharp shears at a smooth place between nodes about 2 inches above ground level. The stump, if small, should be split with a sharp knife; larger stumps may be split with a grafting tool or chisel.

Budwood for scions should be chosen from healthy vines. A graft scion should be 5 to 8 inches long with a 1/4 inch to 1/2 inch diameter and have 2 or more buds. The portion of the side to be inserted in the cleft should be cut carefully to a long, tapering wedge, preferably slightly thicker on one side. The wedge cut should be inserted carefully into the cleft so that the cambium on its thickest edge and that of the stump match. The pressure of a large stump may hold a scion securely; small stumps should be tied firmly with string or grafting tape.

Grafts are mounded with soil to prevent drying of the scion. The graft should be banked with clean, moist soil up to the top of the scion. Tar-paper

cylinders can be placed around the mound to prevent erosion and drying out. During dry periods, watering will be necessary about twice a week. The grafted vine should be trained to a single shoot on a stout, permanent stake attached to the trellis wire.

Where feasible the rows should be set in a north-south direction so that both sides of the vines will receive sufficient sunlight during the day. The most commonly used spacings and vines per acre are shown in Table 2.

Transplanting is recommended in late dormancy if the soil moisture is adequate; time of planting will usually be January in south Florida, February in central Florida, and March in north Florida.

The bunch grape should be set at the same depth at which it was growing in the nursery. Grapes can adapt to a wide range of soils including most of those suited to citrus culture. Fine sands and upland soils, especially those with underlying clay at about 3 feet, are ideal. Soils less adapted to viticulture are the white sands, e.g., St. Lucie, Leon, St. Johns, and Immokalee. Poorly drained soils such as marl, peat, muck, and peaty muck are not recommended.

Growers should avoid planting grapes in pockets having poor air drainage because late spring frosts may destroy tender shoots and blooms.

TRELLISING

A wire trellis, using number 9 or 10 galvanized steel wire, can be constructed on 7-foot treated posts set 2 feet in the ground. End posts should be 8 feet long and set 3 feet into the ground, with braces to carry a heavy trellis load. Space the posts to accommodate three vines between the posts. The bottom wire should be 2.5 feet above ground level and stapled to the side of the post while the top wire should be 5 feet above ground level and stapled to the top center of the post. A "clothesline" trellis with 5 parallel wires mounted on cross arms 5 feet high provides heavier yields.

An overhead trellis with wires at the 7 foot height may be used where shade and maximum yields per square foot are desired.

TRAINING

The first year set a 5.5-foot stake by each plant and tie the stake to the top wire of the trellis. As shoots begin to grow from the plant, select the healthiest shoot and secure it to the stake with string or tape. **Remove all other shoots.** As the selected shoot grows, it eventually becomes the trunk of the vine. It is important to keep it growing straight up the stake by (a) tying with string as needed for support and (b) removing lateral and base sprouts while small. Be sure to leave at least one lateral shoot to grow each way along each wire.

PRUNING

Pruning is done in Florida during the following dormant periods: (a) south Florida-January; (b) central Florida-January 1 to February 15; and (c) north Florida-January 1 to March 10.

"Bleeding" of grape vines is not harmful if pruning is done when vines are dormant.

Vines that fail to reach the top wire during the first year should be pruned back to buds near the ground. Vines that reach the top wire during the first year should be pruned to a single cane of 3 to 5 buds along each wire in each direction. After the second year, leave 4 new wood canes (1 for each direction on each wire) with 8 to 12 buds on each cane. The older and more vigorous the vine is, the greater the number of buds that can be left on each cane at pruning time. In addition to the 4 canes, leave short 2 or 3 bud spurs near the points of cane origin (near the trunk) for renewal of canes the following year.

Canes are pruned short (3 to 5 buds), and many more canes are left per vine if the "clothesline" trellis is used.

If vines are not pruned at all, the number of clusters will increase, but the size of both clusters and berries will decrease so that only stems and cull berries are produced. Further, the length and width of the vines will make them more difficult to harvest or cultivate.

FERTILIZATION

The pH and nutrient status of the soil should be determined by soil analysis prior to planting. Highly acid soils can be brought to a more desirable level (pH 6.0) by mixing dolomitic limestone in the soil at about 5 pounds/100 square feet of area. About 1/4 pound of steamed bonemeal (mixed with soil around the roots) should be applied at planting time. The first year, soon after spring growth begins, apply 1/4 pound of 6-6-6 or 8-8-8 with 20 to 30% of the nitrogen from natural organic sources, in two lateral bands 1 foot away from the plant. Repeat this application in May, June, and early September. The second year apply 1 pound of the same mixture in February, May, and just after harvest. Rates can be increased in future years but should not exceed 4 pounds per vine per year. Split applications are more efficient than a single application. Weed control is essential to allow maximum benefit to be received from fertilization and irrigation.

CULTIVATION

Shallow cultivation, sod, or a good herbicide program may be utilized in the production of bunch grapes. For a homeowner cultivation is probably best. An area approximately 2 feet from the trunk of the tree should be maintained in a weed-free condition. The grape has a shallow root system so cultivation should be as shallow as possible. Mulches may be used to control weeds and conserve moisture. Either black polyethylene or 4 inch deep leaf mulches are good.

IRRIGATION

Many first-year grape plants have died in Florida vineyards from lack of soil moisture. Water should be provided when needed; even older plants will respond to irrigation. Applications of 1 to 1.5 inches every 2 weeks during April and May will be sufficient for both old and young vines.

MATURITY

Bunch grapes mature in late June and July. They should be picked from the vines and stored at 40°F if not processed into jellies, jams, or wine. `Stover'

ripens earliest, followed by 'Blue Lake' and 'Lake Emerald'.

BIRDS AND ANIMAL PESTS

If birds are a problem, nylon netting, chicken wire, scare devices, or extermination can be used to control them. Rats, raccoons, and rabbits can usually be controlled by traps or extermination.

DISEASE AND INSECT CONTROL

A spray program for grapes in Florida is advisable to minimize fruit losses. Spraying should begin when shoots are 3 to 4 inches long and be continued at intervals of 10 days to 2 weeks until 7 to 10 days before harvest. The bloom-time spray is especially important in controlling fruit rots. Black rot and bitter rot can cause damage if vines are unsprayed.

Caterpillars, beetles, and leafhoppers need to be controlled on grapes. Contact local county agent for control recommendations.

Table 1.

Table 1. Bunch grape varieties adapted to Florida.		
Use	Color	Cultivar
Pick-your-own	Purple	Conquistador ^z
	Light green	Stover ^z , Suwannee
Dooryard	Purple	Blue Lake, Conquistador ^z
	Red	Daytona
	Light green	Stover ^z , Suwannee
Fresh Market	Purple	Conquistador ^z
	Light green	Stover ^z
Wine	Purple	Black Spanish ^z , Conquistador ^z
	Light green	Blanc Du Bois, Lake Emerald, Stover ^z , Suwannee ^z
Juice & jelly	Purple	Blue Lake, Conquistador ^z
	Light green	Lake Emerald, Suwannee

^z Require grafting on Tampa or Dog Ridge rootstocks.

Table 2.

Table 2. Bunch grape planting dimensions.			
Between rows(feet)	Between plantswithin rows(feet)	Vines perAcre	Varieties
10	8	545	Lake Emerald, Blue Lake
10	7.5	580	All other varieties