

Texas Muscadines

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Muscadine grapes (*Vitis rotundifolia*) are native to East Texas. They thrive in slightly acid soils and have good disease resistance which makes them particularly suited to the humid climates of East Texas. There are less than 50 acres of commercial vineyards, but muscadines are very popular in gardens, on arbors, and as screens and borders.

The highly flavorful fruits of muscadines are particularly popular for jams, jellies, and juices and are also excellent as fresh fruit, though the skin is tough. There is also some interest in muscadines for home and commercial winemaking.

Varieties

The most recently named varieties of muscadines are perfect flowered or self-fruiting. These will also serve as pollinators for the female varieties. When planting a vineyard, a pollinator variety should be set a minimum of every third vine in every third row.

Most varieties ripen from mid-August through September in East Texas.

1. **Regale** is a very productive purple variety with medium-sized fruits borne on loose, uniform-ripening clusters of 10 to 20 berries each. It has very good quality berries with a wet stem scar and is self-fruitful. It begins ripening in early August.
2. **Summit** is one of the most productive varieties grown in East Texas. It is a very large-fruited bronze grape with exceptionally sweet flavor. It has a dry stem scar and good keeping quality. It requires a pollinator.
3. **Higgins** is a large-fruited, productive bronze grape. It has very good flavor, requires a pollinator, and begins ripening in late August or early September.
4. **Doreen** is a recent release with green, medium-sized berries that dislodge easily from the vine. Doreen was the top producer among varieties in Texas Agricultural Experiment Station tests at Overton in 1981. It has a football shaped berry with a dry stem scar and has excellent keeping quality. It is self-fruitful and ripens from mid-September through early October.
5. **Cowart** is a large-fruited purple variety. It produces well, has good quality, and is self-fruitful.
6. **Carlos** is a medium-sized bronze grape. It is very productive and vigorous and has good quality. It is self-fruitful.
7. **Fry** is a very large bronze grape with exceptional quality. It requires a pollinator. It begins ripening in late August or early September.

Soil

Muscadines are best suited to the fertile, loamy soils of East Texas that are acid with a soil pH of 6.0. Problems with chlorosis are usually encountered in soils that have a pH 7.0 or above.

Deep, well-drained, sandy soil is optimum. Muscadines will not tolerate "wet feet" and should not be planted on soils with poor drainage. If adequate drainage is doubtful, plant the vines on a raised row that will allow adequate drainage in all directions.

Climate

Muscadines are a southern crop requiring warm winters--they will freeze to the ground if grown in areas receiving winter temperatures less than 5 degrees to 10 degrees F. Muscadines cannot be grown north of climatic zone 7A. When grown on well-drained soils, they can withstand exceedingly high levels of annual precipitation. Unlike bunch grapes, complications from Black Rot and high relative humidity are not major limiting factors.

Establishing the Vineyard

Establish the vineyard by setting the posts 10 feet apart in 10-foot rows. The plants will be set at the same spacing as the posts. Posts should be wood or metal fence posts. Posts in the row should be a minimum of 7 feet long with at least 2-inch tops. They should be set at least 2 feet deep in the soil. End posts should be 8 feet long with 5-inch tops. These should be set at least 3 feet deep in the soil.

Propagation

Muscadines are propagated by layering. Layering is done by taking a lower cane and placing it under the soil during the dormant season. During the second dormant season, the rooted cane is removed from the soil and a new plant is obtained.

Planting

Set vines in late winter after the danger of hard freezes is past. Care should be taken to keep the roots moist while planting by keeping the plants in a container of water or by wrapping the roots with wet burlap.

Dig the planting hole wide enough to allow the roots to be spread and set the plants 1 or 2 inches deeper than they grew in the nursery. Set the plants immediately against the posts so that they may be used for training. Fill the planting hole with loose topsoil, pack firmly, and thoroughly water the newly set plant. Never add fertilizer to the planting hole.

Cut the tops of the dormant plant back to approximately two buds. Growth from these buds should be allowed to develop freely during the first year to develop a strong root system.

Trellising

Use one 10-gauge wire 66 inches high from the soil surface and connected to 7-foot posts which are set every 10 feet. Vines are planted every 20 feet.

Training

Train two trunks up the fence posts the second year. Loosely tie the shoot to the post every 6 inches in order to develop a straight trunk. Remove any extra shoots once the shoot being trained appears safe from accidental breakage. Also, pinch off any side shoots, but not leaves, from the shoot being trained. Train each of the shoots in opposite directions down

the wire.

Pruning

Prune in the months between November and February. If pruned after December, the vines will bleed water profusely. This is common and not a problem.

On mature vines, spurs are selected along the horizontal trunk or cordon every 6 inches. The spurs should be pruned to 2 or 3 buds on 3- and 4-year-old vines and lengthened to 4 or 5 buds as the vine matures and vigor increases.

Remove shoots not needed for spurs or fruiting arms.

Remove vigorous shoots as they develop at the bend near the top of the posts. The single curtain pruning system is illustrated in Figure 1.

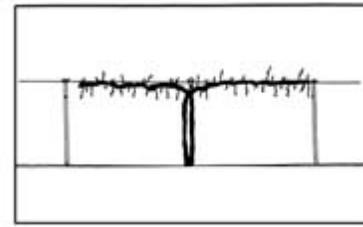


Figure 1. Single curtain pruning systems for muscadine grapes.

Figure 1. (Click image for larger view.)

Fertilization

Muscadines respond well to applications of balanced N-P-K fertilizers such as 4-1-2 or 3-1-2. Unless specific deficiency symptoms are found, no other fertilizer mineral is necessary in Texas.

Apply approximately one pound of fertilizer per year of vine age up to a maximum of four pounds. Applications in year one and year two are best applied in small 1/4 pound increments every two weeks in April, May, and June. A single application in February or March is usually adequate on mature vines. Keep fertilizer at least 18 inches from the trunk of vines. Avoid applying fertilizer in sod middles.

Weed Control

Muscadine roots are very shallow and should not be mechanically cultivated. Disking or other forms of tillage damages roots and reduces vine vigor.

Weeds in first year vines should be controlled by hoeing out about a 3-foot circle around each vine. Kill weeds with ROUNDUP or RELY after the second year. Protect the trunks with growth tubes, aluminum foil, or paper.

Control weed growth in row middles with mowing. This will avoid danger of root pruning from disking and will help keep soil erosion in check.

Water Requirements

Muscadines are commonly grown in East Texas without irrigation, but low summer rainfall often limits fruit size and production of dryland vines. Irrigation is essential for establishment of vines in years one, two, and three.

Irrigation requirements will vary depending upon the soil, vine vigor, and weather conditions. General guidelines that can be used as a basis for applying water with a drip irrigation system are given below.

Water Applied to Each Vine (Gallons Per Week)

	April-June	July-Sept.

Year 1	7	14
Year 2	14	28
Year 3	28	56

Adjust irrigation rates as necessary to compensate for extremes in soil drainage or weather. Reduce irrigation in September or after harvest in order to harden the vines for winter. Serious freeze injury can result if irrigation and fertilization are continued too late into the fall.

Harvesting

Muscadine varieties ripen from early August through September. Mature fruit are easily dislodged from the vine. Ripe berries can be harvested rapidly by placing a canvas or catching frame under the vine and shaking the vine or wire very hard. Vines should be harvested every two to five days.

Varieties with a wet stem-end scar, such as Regale, will not store well and should be processed soon after harvest. Varieties with a dry stem scar, such as Summit and Doreen, will keep well for at least a week if refrigerated at 35 degrees to 45 degrees F.

Marketing and Processing

Market outlets for muscadines in Texas are limited. Pick-your-own and direct consumer sales are possible. There are some limited sales to commercial wineries. Commercial marketing through grocery store chains and similar outlets for fresh produce has not been developed. Large muscadine plantings are not advisable unless larger outlets can be developed.