

Muscadine Grapes in the Home Garden

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Introduction

Muscadine grapes are well adapted to the Coastal Plain of North Carolina, where temperatures seldom fall below 10°F. Considerable injury generally occurs where winter temperatures drop below 0°F. Some of the more hardy cultivars such as 'Magnolia', 'Carlos' and 'Sterling' survive northward to Virginia and westward to the foothills of the Blue Ridge Mountains. Muscadines have a high degree of tolerance to pests and diseases that makes the production of bunch grapes nearly impossible in eastern North Carolina. There is no other fruit with such strong personal associations for so many native North Carolinians. The fruit has a distinct fruity or "musky" aroma, while the juice by itself is sweet with a light taste and aroma. The fruit is very popular with native Southerners for making into wine, pies and jellies.

Origin

Muscadine grapes, (*Vitis rotundifolia*, or alternatively, *Muscadiniana rotundifolia*) are often referred to as *scuppernongs*. Muscadine is native to the Southeastern United States and has been cultured for more than 400 years. Native Americans preserved muscadines as dried fruit long before the Europeans inhabited this continent. As early as 1565, Captain John Hawkins reported that the Spanish settlements in Florida made large quantities of muscadine wine. For much of the history of the crop, varieties were simply selections from the wild. The first recognized muscadine cultivar was a bronze selection, found before 1760 by Isaac Alexander in Tyrrell County, NC. It was first known as the 'Big White Grape', and was later named 'Scuppernong' after the area in which it was found. With time, the name scuppernong became generic with all bronze muscadines, regardless of actual variety name. However, this is incorrect nomenclature, since 'Scuppernong' is only one of many cultivars of muscadine grapes. Bullis and its variants (bullace, bullet grape, bull grape) are very old names for dark-fruited muscadines. Some authorities have written that the name "Bull" grape reflects comparison of the berries with cow or pigs eyes; or, alternatively, muscadines were called "Bullace" because of their resemblance to a European plum of the same name, and that Bullis, Bull and Bullet are all corruptions of the Bullace!

Nearly 100 years of breeding work has resulted in the release of many improved cultivars. 'Carlos', 'Doreen', 'Nobel', 'Magnolia', and 'Nesbitt' are some of the most important cultivated varieties in North Carolina.

Environmental Preferences

Light -- Avoid shaded areas. Fruit set and production will be reduced if the vines are shaded for more than several hours each day during the growing season.

Soil -- Muscadine grapes will survive and produce a crop on a wide range of soils as long as internal drainage is good. Plant failure can be expected in locations where water stands for even short periods after heavy rains. Soils with a hardpan are not suitable. Active growth late in the growing season makes vines susceptible to winter injury on soils with more than 1½% organic content. Proven tobacco sites have generally supported good muscadine grape growth and production. Apply and work in dolomitic lime at the rate recommended by the soil test to bring the pH to 6.5 before planting. Your county extension office has more information and kits for soil testing.

Varieties

'Scuppernong' bronze and 'Thomas' black are the cultivars most widely known and asked for by the public. The following are much-improved, recommended cultivars.

- **Carlos** -- bronze, mid-season, medium size, perfect flowered, very dry stem scar, good fresh or for wine.
- **Doreen** -- bronze, very late, medium size, perfect flowered, dry stem scar, good fresh or for wine.
- **Magnolia** -- bronze, early, medium to large size, perfect flowered, wet stem scar, excellent fresh flavor, wine and juice.
- **Nesbitt** -- black, early, large size, perfect flowered, dry stem scar, good fresh, but poor wine color.
- **Noble** -- black, early, small size, perfect flowered, wet scar, good fresh, wine and juice.
- **Regale** -- black, mid-season, medium size, perfect flowered, wet scar, good fresh, wine and juice.
- **Triumph** -- bronze, early, large size, perfect flowered, dry scar, good fresh, fair wine.

All of these cultivars are perfect flowered (male and female flower parts), so a single vine will be fruitful. Other available cultivars such as 'Fry', 'Higgins', 'Scuppernong', and 'Jumbo' have flowers with only female flower parts and must be planted near a perfect-flowered cultivar.

Planting

Wait until there is little chance of sub-freezing temperatures before spring planting. Potted plants are easier to hold until the proper planting time, but bare-root plants are satisfactory if the roots are kept moist (not wet), and the plants are refrigerated until planting time. Plant at the same depth or slightly deeper than the previous planting depth. Vines should be a minimum of 10 ft apart in the row, but more desirably, 20 ft apart. Distance between rows can depend on the equipment used for mowing, but 8 ft should be a minimum.

Trellising

The type of trellis selected will often determine where the plant(s) can be established. A space at least 10 ft long by 6 ft wide should be provided for each vine. Decide on the trellis system and complete the construction before planting. Many types of trellising have been used successfully, but an equal number have been designed by homeowners that have not been practical for long-term management of vines. A practical system allows for establishing permanent cordons (arms) that can be easily reached for the required annual pruning. This requires training of the cordons to single strands of wire (No. 9 is recommended). Training to woven-wire fencing or overhead structures, where individual cordons are not maintained at least 4 ft apart, will be difficult to prune. A single wire 5 to 6 ft above the ground and well anchored on each end is the easiest trellis to construct and maintain. Four-ft cross arms of 2 x 6 inches, treated lumber, can be attached to treated posts to support double wires. The double-wire system will yield about 30% more than the single-wire system. Growing muscadine vines over a garden arch or a pergola can be aesthetically pleasing and provide shade, but if individual cordons are not maintained, management will be difficult, neglect is likely, and fruit production will decline.

Training

After planting, prune to one stem and cut this stem back to 2 to 3 buds. When new growth begins, select the most vigorous shoot and cut away the others. A bamboo-training stake beside the plant is convenient for attaching the growing vine. Loosely tie the shoot to the stake. Paper-covered wire ties that are wrapped around the vine and stake work well but to avoid girdling, do not twist the ties. Continue tying the vine each week and removing side shoots. When the vine is just below the wire, cut the growing tip to force lateral buds. Shoots from the lateral buds should be trained down the wire to form the cordons, just as the trunk was trained up the stake. The goal should be to get the vine on the wire the first growing season and to full length in the second season. After the cordon has developed to full length, side shoots

can be allowed to develop. These side shoots should be cut back to 2 to 3 buds during the dormant season. The next season, the buds on these side shoots will develop into shoots that produce flowers and fruit. Each dormant season, the lateral shoots must be cut back to 2 to 3 buds by hand or with a hedge trimmer.

Fertilization

Apply ¼ lb of 10-10-10 in an 18-inch circle around each vine after planting (late April to early May). Repeat every 6 weeks until early July. The second year, apply in early March, May and July at double the first year's rate (½ lb per vine). Do not put the fertilizer closer than 21 inches from the trunk. To minimize the potential for winter cold injury, piedmont and foothills growers should omit July fertilizer applications. For mature vines, scatter 1 to 2 lbs of 10-10-10 uniformly under the vine (60 to 120 sq ft) in early to mid-March and apply another 1 lb in mid-June. If the average length of new vine growth exceeds 3 to 4 ft during the season, reduce the amount of fertilizer the following year by 20%. Continue adjusting fertilizer rate until the desired vigor (based on vine length) is obtained. Avoid mulching materials that will release nitrogen late in the season and cause increased susceptibility to winter damage.

In eastern NC, an alternative fertilizer to 10-10-10 that shows promise involves the application of 6-6-18 tobacco fertilizer because it contains several micronutrients in addition to N, P and K. It should be applied in March and then again in late June, at ¼ lb per vine after planting and ½ lb per vine in the second year. Mature vines should receive 2 to 3 lb at each application. An application of calcium nitrate should also be applied in mid-May at 6 to 7 oz per vine. Leaf samples can be taken in mid June to determine the actual nutritional status of mature vines.

Magnesium -- Grapes have a relatively high magnesium requirement. You may want to apply Epsom salts in July at 4 lbs per 100 gals of water (roughly 1 Tbsp per gal) or by sprinkling around the vines at 2 to 4 oz per vine for young vines and 4 to 6 oz per vine for mature vines to prevent or correct a magnesium deficiency.

Boron -- For mature vines apply 2 Tbsp of Borax mixed in with the fertilizer and spread over a 20 ft x 20 ft square every 2 to 3 years, before bloom. Boron deficiency is more likely on sandy soils with high pH. Excessive boron causes injury; do not exceed boron recommendations.

Weed Management

Keep an area 1 to 2 ft in diameter around each vine free of weeds by shallow cultivation for the first 2 years. A coarse, non-nitrogen-releasing mulch such as bark will also help control weeds and reduce moisture loss from the soil.

Irrigation

Muscadine grapes are quite drought tolerant. Water during dry periods the first two years, then the vines can usually obtain adequate water from the soil even during dry periods.

Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical. For assistance, contact an agent of the North Carolina Cooperative Extension Service in your county.

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