

Growing Grapes in Georgia

Southern Piedmont region planting Pierce's disease-resistant grapes

By Fritz Westover



Lenoir is shown growing on the Watson training system in the Southern Piedmont region of Georgia.

Georgia is currently home to approximately 500 acres of bunch grapes, most of which are planted in the northernmost part of the state. (Bunch grapes include *vinifera*, native *labrusca* varieties and hybrids but not Muscadine.) The Southern Blue Ridge area—located north and east of Dahlonega, Ga., and bordering on Tennessee and North Carolina—is home to the majority of Georgia's 47 wineries. This region is predominantly planted with French *vinifera* varieties including Cabernet Sauvignon, Merlot, Petit Verdot, Petit Manseng, Chardonnay and Pinot Gris, as well as common French-American hybrids such as Chambourcin, Vidal Blanc and Seyval Blanc.

However, new vineyards and wineries are now being established in another region of Georgia. This area, the Southern Piedmont, includes counties west and south of Atlanta and extends from Alabama up to Virginia.

Characteristics of the Southern Piedmont region

The Southern Piedmont region is situated at the southern stretch of the Blue Ridge Mountains and consists of rolling to hilly upland foothills with elevation ranging from 330 to 1,310 feet above sea level. The land area in Georgia constitutes 27% of the Southern Piedmont region. Temperatures are more moderate than those in the Southern Blue Ridge region (USDA hardiness zones 7a-8a) and rarely drop below 0° F, even

KEY POINTS

Historically, vineyards in Georgia outside the Southern Blue Ridge region have been limited to Muscadine grape varieties resistant to Pierce's disease.

The unique soils and climate of the Southern Piedmont south and west of Atlanta, Ga., however, are well suited to PD-resistant grape varieties such as Blanc du Bois, Lenoir, Norton and Villard Blanc.

Research work conducted in Texas and Alabama has improved vineyard-management practices, selection of training systems and cultural practices, resulting in better wine quality for PD-resistant varieties.

High-quality, award-winning wines are now being produced in the Southern Piedmont, and vineyards growing the PD-resistant varieties have cropped reliably for the past three years.

in the northern stretch of the area. Late-spring frosts can still be a concern for vines not planted on sites with relative elevation that encourages cold air drainage.

Soils in the Southern Piedmont are classified as well drained, with ample red clay subsoil to hold moisture between rains. Although average annual precipitation ranges from 45 to 60 inches, drip irrigation is recommended due to hotter summer temperatures than experienced at dry-farmed sites in the Southern Blue Ridge. Dominant parent rock includes biotite, gneiss, schist, slate, quartzite, phyllite, amphibolite and granite.

Soils generally range from loamy to clay in texture, with pH from 4.5 to 6.5, and can be shallow to very deep, and severely eroded in some instances. Vineyards planted on soils with either sandy clay loam or loamy clay surface soil (8-14 inches)—or clay loam to sandy gravelly clay loam subsoil over decomposing rock—are showing good production potential. Common nutrient deficiencies in grapevine tissue include nitrogen, phosphorous, magnesium and boron with occasional low potassium. Water erosion of shallow surface soil remains a challenge when developing and managing vineyard sites.

Pierce's disease: the major challenge

The major factor limiting production of bunch grapes in the Southern Piedmont region is Pierce's

disease (PD), a lethal disease that is endemic to the Southern Piedmont and the Coastal Plains. PD is caused by the bacterium *Xylella fastidiosa* and vectored by xylem-feeding insects. In susceptible varieties, including *V. vinifera*, the bacteria clog the vascular tissue, causing drought-like symptoms and eventual vine death.

The foothills of the Southern Blue Ridge in north Georgia have less risk of PD because of the colder winter temperatures at higher elevation. Studies by North Carolina State University (see "Blanc du Bois Takes Root" in the February 2012 issue of *Wines & Vines*) have shown that temperatures below 10° F, sustained for three or more days, may reduce survival of the PD bacteria. Warmer winter temperatures in recent years have increased PD pressure in some areas of the Blue Ridge foothills, making established vineyards a moving target for the disease.

Given the increased pressure for PD in north Georgia, it was once difficult to imagine the expansion of vineyard acreage in the Southern Piedmont. Muscadine grapes (*V. rotundifolia*) have long been planted in the South in part because of their resistance to PD. These grapes, with their distinctive aromas and flavors, have a following among both winemakers and local consumers.

Recently, the adoption of several PD-tolerant hybrid bunch grape varieties has allowed the expansion of the wine industry in



Four Pierce's disease-tolerant cultivars are evaluated on three training systems at the research and demonstration block at Trillium Vineyards in Bremen, Ga.

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this region and southward. These newly established varieties in Georgia are more similar in character to European wine grapes than the Muscadines (both in the vineyard and winery) and have greater marketing potential outside the tasting room. The leading hybrid varieties being planted include Blanc du Bois, Lenoir and Norton. Minor varieties of interest include the French-American hybrid Villard Blanc and Lomanto, a T.V. Munson hybrid.

information about these high-value hybrids.

The first research demonstration vineyard in the Southern Piedmont was established in 2012 to study the production potential of four PD-tolerant hybrid grapes—Blanc du Bois, Lenoir, Norton and Villard Blanc—planted on three vine training systems: vertical shoot positioning, Geneva double curtain and Watson (a V-shaped trellis developed in Texas). This demonstration site was established at Trillium



A Villard Blanc vine in its second leaf ripens its first crop at Little Vine Vineyards in Villa Rica, Ga.

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Taking the road more researched

The Texas wine industry has a long history of producing PD-tolerant grape varieties, and it is widely credited with putting cultivars like Blanc du Bois and Lenoir (Black Spanish) on the current map of grape varieties. Plantings of Blanc du Bois in Texas date back to the late 1980s, when the University of Florida first released this variety. Plantings of Lenoir in Texas and Georgia have been identified back to the late 1800s. In 1900, Georgia had thousands of acres of grapes in the Southern Piedmont region, including a test plot at the University of Georgia Experimental Station in Griffin, Ga., containing more than 300 grape varieties including Norton, Lenoir and 32 T.V. Munson hybrids.

Work by Texas A&M AgriLife Extension during the past 10 years has helped to improve vineyard management practices, the selection of training systems and cultural practices to improve wine quality in that state. Auburn University also is evaluating several of these varieties in nearby Alabama to compare growth and yield characteristics. Growers in Georgia are utilizing information from outside the state and have made recent efforts to develop local

Vineyards in Georgia's Haralson County in collaboration with the University of Georgia (UGA), the Vineyard and Winery Association of West Georgia and Westover Viticulture. Funding through the USDA's Specialty Crop Block Grant Program was awarded in 2015 to support data collection and statistical analysis to help growers understand the economic potential for each variety and expected quality parameters. The UGA Extension and local grower organizations also use the research demonstration block at Trillium Vineyards for educational workshops about pruning, vine training and vineyard fertility management.

Approximately 10% vine death was reported in one- to two-year-old Blanc du Bois vines in Carroll and Haralson counties when temperatures dropped down to 0° F during the polar vortex of 2014. Older vines seemed to handle this temperature better, and Norton, Lenoir and Villard Blanc were not affected, indicating that Blanc du Bois may be better suited to sites with good relative elevation from the standpoint of cold-air drainage—and preferably in plant hardiness zones 7b and warmer.

Norton has increased in acreage during the past decade in the Southern Blue Ridge region,

although other PD-tolerant hybrid varieties have only been planted in commercial vineyards in the Southern Piedmont since 2011, beginning with plantings at Little Vine Vineyard in Carroll County, west of Atlanta. Little Vine Vineyards now produces five wine styles from their estate-grown Blanc du Bois, Lenoir and Norton varieties. Since their initial planting and the formation of the Vineyard and Winery Association of West Georgia to promote the establishment, more than eight commercial vineyards have been planted in the region with an estimated total of 20 acres in the ground as of 2015. Other commercial vineyard plantings in the Southern Piedmont include Clearwater Vineyards, Trillium Vineyards and the Vineyards at Mill Creek.

Future expectations

The modest increase in vineyard acreage planted to PD-tolerant bunch grapes in the Southern Piedmont is expected to grow at a more rapid rate now that quality, award-winning wines are being produced and vineyards have cropped reliably for the past three years. For example, mature vineyards in 2015 yielded 4-8 tons per acre with the common PD-tolerant hybrid varieties.

Pierce's disease-tolerant varieties can host the bacterial pathogen—often without expressing symptoms—and therefore are not recommended for planting in mixed stands of *V. vinifera* or other non-PD-tolerant hybrid wine grapes. This factor should discourage movement of these varieties into the *V. vinifera*-producing regions of north Georgia, further distinguishing them as unique to the Southern Piedmont region. Dr. Andrew Walker and his lab at the University of California, Davis, has established PD-resistant varieties containing 87%-97% *V. vinifera* parentage, which also will be considered for future plantings in the region. Walker's hybrids already are being tested in Alabama and Texas.

The Georgia Department of Agriculture is enthusiastic about the potential for the hybrid grapes to greatly expand the bunch grape and wine industry beyond a handful of counties in the Southern Blue Ridge region. Vine stock has been exclusively planted as non-certified dormant, own-rooted vines with the potential for certified stock entering the market during the next five years via Foundation Plant Services in Davis, Calif. 🍷

Fritz Westover is a viticulturist and owner of Westover Viticulture, based in Houston, Texas. He specializes in vineyard consulting, research and education in the south and southeastern United States, drawing from more than 15 years combined experience in the vineyard industry including extension and outreach in Virginia, Texas and California. Fritz is a contributor to *Wines & Vines* and maintains a practical grapegrowing blog and grower resources at vineyardadvising.com.



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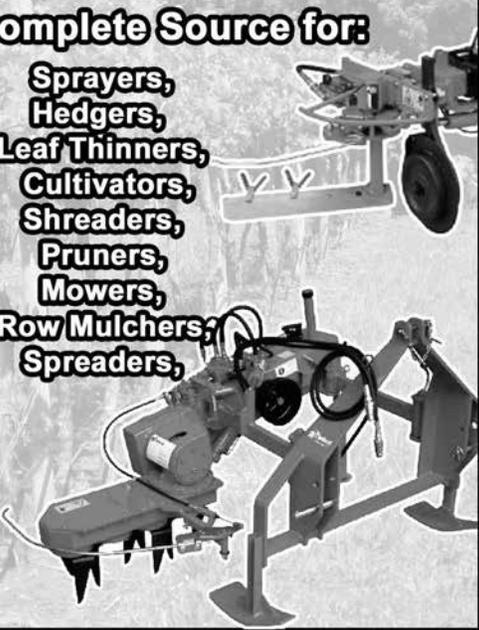


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