



This research explores the cultivars and spray regimens that will make it possible to grow wine grapes organically in Virginia. Researchers have identified several wine grape varieties that show promising disease resistance, as well as organically-certified sprays that can be used to combat fungal diseases that are prevalent in Virginia's humid climate.

Organic viticulture in Virginia

Who cares and why?

Wine grapes are an important specialty crop in Virginia. In 2011, the Virginia Department of Agriculture and Consumer Services ranked grapes as the 20th most profitable commodity in the state. The number of Virginia wineries and associated vineyards has increased appreciably over the last ten years to approximately 234 wineries (2013) and over 3000 acres of vines (2010). Virginia's humid climate leads to a high level of occurrence of fungal diseases in grape vines, which has made attempts at growing wine grapes by organic methods unsuccessful thus far. Consumers are concerned with contamination of their properties by neighboring farms, as well as with the potential negative health effects of consuming conventionally-produced crops; they are demanding agricultural practices that have minimal effect on the environment. Organic viticulture research is important for Virginia vineyards because of the need to capitalize on the flourishing organic market: U.S. sales of organic wines reached \$80 million in 2005, a 28% increase over the previous year. Virginia State University, in partnership with Virginia Tech, is working with select grape cultivars and fungicide spray programs to determine whether or not organic viticulture is possible in Virginia.

What has the project done so far?

Researchers evaluated four grape cultivars (Petit Manseng, Corot noir, Arandell, and Vidal blanc) and several fungicide programs for potential use in organic production in Virginia from 2012 to 2014. Our results demonstrate that organic wine grape production in Virginia can be achieved by utilizing select grape cultivars in combination with particular spray programs. Even in the abnormally wet growing season of 2013, the severity and incidence of fungal disease in all but one of the organically managed grape cultivars were below the threshold for maintaining healthy vines.



Vidal blanc was the exception: in 2013, it was not sufficiently resistant to downy mildew [*Plasmopara viticola*] and is thus precluded from organic management in Virginia. The study demonstrated the pronounced disease resistance of the newly developed Cornell cultivar, Arandell, in Virginia. The results suggest that the organically-registered fungicide Serenade (*Bacillus subtilis*, BASF, Florham Park, NJ) is effective in reducing the severity and incidence of black rot [*Guignardia bidwellii*] and phomopsis [*Phomopsis viticola*].

Impact Statement

- Identified grape cultivars that have the potential to be managed organically in Virginia, specifically the cultivar Arandell, which is highly disease resistant
- Demonstrated similar efficacy between a conventional spray program and two organic spray programs
- Determined that the Vidal blanc cultivar is not suitable for organic production in Virginia

Strategic Priority: This project addresses the priority of enhancing the competitiveness of Virginia's specialty crops.

What research is needed?

Further research is needed to evaluate grape cultivars, organic fungicides, and cultural practices that were not assessed in this study. This study should be extended to determine if the success can continue as fungal spores and the resulting pressure increase over time.

Want to know more?

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