



# Organic Viticulture Research at the Eppington Plantation



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## History of the Virginia Wine Industry

- In 1619 the Jamestown settlers signed into law a requirement for each male settler to plant and tend at least ten grape vines but the attempt to grow vinifera vines failed due to the Phylloxera root lice and fungal diseases which are rampant in Virginia's humid climate.
- In 1769, the Virginia Assembly appointed French viticulturist Andrew Estave as winemaker and viticulturist for the colony. Estave failed because the European *Vitis vinifera* grapes were too fragile for the humid Virginia climate.
- Thomas Jefferson unsuccessfully attempted to cultivate European grapes for more than 30 years at Monticello. George Washington, too, attempted unsuccessfully for 11 years to cultivate grapes at Mount Vernon.
- While only 3 wineries were located in Virginia in 1975, Virginia is home to over 200 wineries today largely due to the use of hybrid grape varieties, grafting European varieties onto American rootstocks, and the use of synthetic fungicides.
- 2012 VDACS awards grant to Virginia State University and Virginia Tech to research the potential for organic viticulture in Virginia.



- Virginia State University, Chesterfield County, and the Eppington Foundation sign a license agreement granting Virginia State University's School of Agriculture permission to conduct organic viticulture research on the Eppington Plantation property.

## Overview & Methods

- Varieties Petit Manseng, Vidal Blanc, Corot Noir, and Arandell (NY95.0301.01) planted at Eppington Plantation April 2012 to determine if new varieties and organic fungicides can be used successfully.
- Fungal diseases studied: Black Rot, Phomopsis, Downy Mildew, Powdery Mildew, *Botrytis cinerea*.
- Fungicides used: Copper, Sulfur, *Bacillus subtilis*, hydrogen dioxide, and Potassium bicarbonate. Hydrated lime & copper mixed (Increases effectiveness and reduces sensitivity).



## Results After Second Year

VSU/Eppington Vineyard (Cumulative 2013 Season)			
Black Rot	Variety	Disease incidence %	Disease severity %
	Corot Noir	7.8 B	0.21 B
	Arandell (NY95.0301.01)	1.7 C	0.03 C
	Petit Manseng	7 B	0.18 B
	Vidal Blanc	11.2 A	0.31 A
	Treatment	Disease incidence %	Disease severity %
	A Cu (1lb) + Ca(OH) <sub>2</sub> (2lb) + Sulfur (2.4lb)	9.4 A	0.27 A
	B Cu (1lb) + Ca(OH) <sub>2</sub> (2lb) + Sulfur (2.4lb) + Serenade ASO ( 2.4 qt)	6.7 B	0.17 B
	C Conventional (Mancozeb 3lb + Prophyt 2pt + Sulfur 2.4lb)	4.6 C	0.12 B
Downy Mildew	Variety	Disease incidence %	Disease severity %
	Corot Noir	26.5 B	1.95 B
	Arandell (NY95.0301.01)	0.01 C	0.03 C
	Petit Manseng	27.9 B	1.79 B
	Vidal Blanc	49.4 A	8.29 A
	Treatment	Disease incidence %	Disease severity %
	A Cu (1lb) + Ca(OH) <sub>2</sub> (2lb) + Sulfur (2.4lb)	31.1 A	3.5 A
	B Cu (1lb) + Ca(OH) <sub>2</sub> (2lb) + Sulfur (2.4lb) + Serenade ASO ( 2.4 qt)	27.6 B	3.27 A
	C Conventional (Mancozeb 3lb + Prophyt 2pt + Sulfur 2.4lb)	19.8 C	2.27 B
Phomopsis	Variety	Disease incidence %	Disease severity %
	Corot Noir	14.1 B	0.29 B
	Arandell (NY95.0301.01)	2 C	0.03 C
	Petit Manseng	14.1 B	0.28 B
	Vidal Blanc	21.1 A	0.52 A
	Treatment	Disease incidence %	Disease severity %
	A Cu (1lb) + Ca(OH) <sub>2</sub> (2lb) + Sulfur (2.4lb)	16.4 A	0.32 (p=06)
	B Cu (1lb) + Ca(OH) <sub>2</sub> (2lb) + Sulfur (2.4lb) + Serenade ASO ( 2.4 qt)	11.7 B	0.29
	C Conventional (Mancozeb 3lb + Prophyt 2pt + Sulfur 2.4lb)	10.4 B	0.24