

Contract

UNL Marquette Trellis Study Year 2 - #18-13-058

Grant Amount

\$3,000

Contact

Paul Read

UNL Plant Sciences Building Room

pread@unlnotes.unl.edu

(402) 472-5136

Issue of Interest

This project addressed the question often asked by Nebraska grape growers, "What is the best trellis system for new cultivars such as Frontenac, Marquette, and other newly introduced cultivars?" This issue concerned the need to know upon what trellis system new hybrid grapes would best perform in Nebraska. Many growers were raising this concern, since the newness of hybrids such as Frontenac, Marquette, and Saint Croix have received little research attention and study.

Approach to Problem

In addressing this issue, a planting of Marquette grapevines has been established on two University of Nebraska Viticulture Program (UNVP) research sites. The problem was further approached by discussions with proprietors of Czechland Vineyards (Crete, Nebraska), who volunteered their vineyard as a site for testing different trellis systems for Frontenac and Saint Croix hybrids. Six vine plots were replicated on five vineyard trellis systems using the following methods: Vertical Shoot Positioned (VSP), High Cordon (HC), Geneva Double Curtain (GDC), Smart-Dyson (SD), and Scott Henry (SH). Data on light penetration in the canopy were taken in years two and three, along with fruit yield and quality parameters in the third year and beyond. Trellis systems included Geneva Double Curtain, Vertical Shoot Positioning, Smart-Dyson, and High Cordon. Duraline, a specially fabricate wire substitute, was used for comparison purposes. The vines were too young for a crop to be harvested, but preliminary results will be obtained in growing season 2011. Four systems were employed by eliminating Scott-Henry because of a relatively high cost.

Goals/Achievement of Goals

Funds for this project were used for four main purposes. As previously referenced, the primary object of this project was to study Marquette grapevines on four different trellis systems. This project also compared yield and crop uniformity among the four trellis systems. An additional component in addressing the stated issue was determining if the trellis system had an influence on cold-hardiness. Finally, this project examined the influence of trellis systems on fruit quality parameters.

Results, Conclusions, Lessons Learned

Vines were trained on the systems noted above and the vineyard workers evaluated the relative difficulty of management of Frontenac vines on the various trellis systems. The use of catch-wires for VSP, SD, and SH systems entailed more labor. An unforeseen observation was noted that for short-statured vineyard personnel, HC and GDC systems presented challenges, in terms of the ability to reach the higher wires. Scott-Henry was not as useful or productive as other trellis systems tested.

Progress According to Outcome Measures

The vines were successfully trained on all five systems. Preliminary light measurements suggested that for Frontenac, HC, and GDC provided the best canopy management systems. Greater insights will be obtained in future years of this ongoing study.