

PRELIMINARY REPORT OF THE UNIVERSITY OF NEBRASKA VITICULTURE PROGRAM (UNVP) TO THE NEBRASKA GRAPE AND WINE BOARD FOR THE 2023/2024 YEAR, JUNE 6, 2024

Numerous accomplishments that were supported by the funds granted to the UNVP by the Nebraska Grape and Wine Board took place during the time of funding from July 1 through the beginning of June 2024. Highlights of research and educational programming are as follows:

- Crop Reduction Studies. Based upon the “conventional wisdom” from many important commercial wine producing locations in many parts of the world indicating improved wine quality by limiting crop size, the UNVP embarked upon a project to determine if these largely vinifera-based theories would be similarly reflected in the cold climate hybrids produced in Nebraska and the Midwest. Over a period of four years in which crop load was reduced for Frontenac, Frontenac Gris, La Crescent, Itasca and/or Cynthiana/Norton in commercial Nebraska vineyards, fruit and juice quality were determined and in limited tests, wine quality was assessed. The reductions took place at E-L stage 29-31 (peppercorn to pea-sized berries post fruit set) by counting the number of clusters per vine and either dropping 25% or 50% of the clusters, with no clusters dropped to serve as a control. Five three-vine replications were employed for each study. Harvest was based upon the grower’s planned harvest of the entire cultivar block. Data acquired were total yield per plant, cluster number per plant, and 100-berry samples were processed for each replication to determine juice pH, degrees Brix, TA, phenolics and flavor parameters. A professional taste panel evaluated the wine quality. The results indicated no improvement in fruit parameters, or juice and wine quality by reducing the crop by 25% or 50%. Although these results strongly suggest that there is no benefit to the grower or the winery by reducing crop size, additional research is indicated, including testing more cultivars, investigating the timing (earlier or later cluster dropping and harvest) and/or testing different reduction percentages. This research project led to Paul Read being invited to provide the opening presentation in Session VE01 at the Eastern Winery

Exposition in Syracuse, NY, where he had the opportunity to further promote Nebraska wines.

- High Tunnel Table Grape Production. Production of table grapes in the field has been fraught with berry damage by environmental conditions and pest pressures, necessitating uneconomic labor costs to remove damaged berries in order to provide salable attractive clusters. Therefore it was determined that to mitigate these problems, production of table grapes under protected cultivation might hold promise for Nebraska growers. Five table grape cultivars were planted into a high tunnel on the University of Nebraska East Campus that was assembled by UNVP personnel from a kit provided by Hummert International measuring 34 feet by 129 feet. Bare-root cultivars were planted in 2017 and included Canadice, Marquis, Mars, Somerset Seedless and Thomcord, based upon the recommendations of nursery owners, grower experience and UNVP tests. The vines were planted in row spacing of seven feet and 7.5 feet between vines in the row. Flower clusters were removed in 2017 and 2018 growing seasons with the first harvest commencing in 2019. With six years data, it is clear that high yields of quality table grapes can be attained by production in a high tunnel. Data on yield, cluster size and berry parameters are available upon request. This project has resulted in development of a scientific journal article to be submitted by midsummer, 2024.
- High Tunnel Vinifera Grape Research. Based upon the demonstrated success of high tunnel table grape cultivation, the UNVP initiated a test to determine the viability of growing *Vitis vinifera* grape cultivars in a high tunnel in Nebraska. It was proposed that successful cultivation of vinifera cultivars could form the basis for either small-scale varietal vinifera wine production or enriching field-grown wine blends with the vinifera grapes produced in the high tunnel. Initially five cultivars were planted to determine the feasibility of a vinifera high tunnel approach. Cabernet Sauvignon, Tannat, Petit Verdot, Riesling and Zinfandel were in the initial planting. Several setbacks have challenged this research – loss of the plastic covering twice because of exceptional winds combined with extreme low temperatures – resulting in exposure to environmental extremes which negated the potential success of these plantings. Results have included loss of nearly all of the Cabernet Sauvignon, Zinfandel and Tannat vines, but

there have been promising results with Riesling and Petit Verdot. In addition replanting with Cabernet Franc, Chambourcin and Regent offer a cautiously optimistic consideration for future success with these cultivars. An additional two or three years will be necessary to decide if this approach has potential for Nebraska's grape and wine industry.

- Extension. Vineyard visits and field days were part of the UNVP's efforts on behalf of the Nebraska grape and wine industry. A summer field day held at Capitol View winery was well attended (July 28) and a pruning workshop on the morning of March 30 provided opportunities to learn about pruning equipment and aspects of delayed pruning to escape late spring cold temperature events. "Retooling your Vineyard" was the theme of the field day held at Miletta Vista Winery, St. Paul Nebraska on April 17. Attendees learned about trellis system makeovers, potential approaches to use of newer trellising materials and were treated to discussions of new cultivars emerging from the breeding efforts of Ed Swanson. Ed also shared his considerable insights based upon his pioneering experience at Cuthills Vineyard and recently as winemaker for Capitol View Vineyard. As will no doubt be reported by the NWGGA, the TOAST event was really successful and blessed with beautiful weather. Paul Read presented two educational programs titled "What's that Grape You are Drinking" and was surprised by an attendee who had taken his Vines, Wine and You class several years previously.
- Teaching. One section of Vines, Wines and You was taught in the Fall 2023 Semester and two Sections were taught in Spring Semester 2024. Although this class is for non-majors, it has been interesting to note the success stories of students who were inspired by this class to explore the world of grape and wine professions and ultimately go into the industry. Examples include winery start-ups, graduate studies that led to PhDs and positions in the commercial industry and several former students that work with the wholesale part of the industry.
- Support for Steve Gamet and Ben Loseke. Funding from the Nebraska Grape and Wine Board has been instrumental in retaining and supporting Steve and Ben. Their contributions to the industry are immeasurable, and help make the University of Nebraska Viticulture Program truly helpful to the Nebraska grape and wine industry.