

NGWB GRANT FINAL REPORT 2011-2012

Contract Number 18-13-122

Contact Information: Dr. Paul E. Read, Professor of Viticulture, Department of Agronomy and Horticulture, 377J Plant Science Hall, University of Nebraska, Lincoln, NE 68513-0724 pread@unl.edu 402-472-5136

Issue of Interest: The overall goal of the University of Nebraska Viticultural Program (UNVP) is to provide science-based research information that will assist the development of the Nebraska grape and wine industry in a sustainable and profitable manner, thus enhancing the economic viability of Nebraska communities. Improving performance of grapes grown in Nebraska vineyards leading to excellent quality wine production is part of this goal. Evaluation and selection of grape cultivars and their efficient management in Nebraska vineyards, along with educational programs that add to the overall capability of grape growers and winemakers are also included in this overall goal.

Approach to Problem: Research vineyards managed by the UNVP and those of grower-cooperators are employed for scientifically designed and implemented research projects. These experiments have been underway for several years, with new ones initiated in this fiscal year as well; they have yielded results that are communicated to the Nebraska grape and wine industry by a variety of educational methods, including workshops, field days, the Annual Nebraska Winery and Grape Growers Forum and Trade Show and by electronic means such as the Nebraska VineLines newsletter and the UNVP website.

Goals/Achievement of Goals: Cultivar and genotype evaluation of over 75 different genotypes has led to recommendations that are helpful to growers starting new vineyards or replacing older plantings – based upon yield data, cold hardiness and disease tolerance, specific cultivars and selections are recommended for different parts of Nebraska. Based upon data obtained in cooperation with Czechland Vineyards, it has become clear that the Geneva Double Curtain trellis system is superior to other systems tested.

The **Northern Grapes Project** was initiated during this reporting period, in addition to follow-up plantings and preliminary evaluations of the **NE-1020** project. Both of these projects involve collaboration among the university and research specialists working on similar grapes, with similar objectives. Results will be shared with these collaborators and reported in multi-author publications when the plantings begin to bear enough fruit for test batches of wine to be produced and evaluated.

Research initiated to evaluate the effects of winter applications of naphthaleneacetic acid (NAA) and vegetable oil have shown promise, but need to be evaluated further (beyond PhD student Dr. Issam Qrunfleh's results noted in his thesis).

Field Days, Other Educational Programs:

- September 10, 2011, Machine Harvest Field Day, Roscoe, Nebraska, over 30 in attendance
- December 3, 2011, "A Fall Workshop for the Grape and Wine industry", Lincoln, Nebraska. Guest speaker, Dr. R. Keith Striegler, Professional Viticulture Consultant, 34 in attendance.
- March 1-3, 2012, 15th Annual Nebraska Winery and Grape Growers Forum and Trade Show, Kearney, Nebraska. Over 200 in attendance, Guest speakers included viticulture and enology experts from Nebraska and the Midwest.
- March 25-26, 2012, Advanced Viticulture for Extension Professionals, Nebraska City, Nebraska, 28 attendees from Nebraska, North Dakota, Iowa, South Dakota.
- March 31, 2012, Willo-Farms Field Day, Blair Nebraska and environs. Attendance 40.
- Throughout the year, several issues of the Nebraska VineLines were mailed, with a transition this year into an electronic format (email). Grower response has been overwhelmingly favorable to this method of information transmission.

Results, Conclusions, Lessons Learned: Very valuable results from UNVP research have been accomplished that will be beneficial to the Nebraska grape and wine industry. Pertinent examples follow:

- Ne-1020 and Northern Grapes Project. Although the latter is newly initiated, the beginnings of a better comprehension of canopy management and crop estimation are underway, with advice to growers made available. The NE-1020 main planting received an extreme setback as a result of severe injury from herbicide drift. However, the damage varied among cultivars and genotypes, so an extensive evaluation was made. The results were summarized and reported to the industry via the Nebraska VineLines (Seyval Blanc, Chambourcin and MN1220 exhibited the least damage, while Sabrevois, Marquette and Valiant were the most damaged).
- Mulch and Ground Cover Studies. As a follow-up to an earlier UNVP study completed at James Arthur Vineyards, research on ground covers and mulches were initiated at another cooperating vineyard (Fox Run Farms, Brainard, NE). Preliminary results suggest that crushed glass and distillers dry grains offer promise as mulches and tall fescue and native vegetation performed well as ground covers. (C. Bavougian, PhD student will be following up on this research in 2012- 2013 as part of her PhD dissertation research).
- Cultivar evaluation: New grapes exhibiting promise include two numbered selections from the Cornell University breeding program, along with Noiret, Corot Noir, Marquette (U of MN introduction), Frontenac and Bianca, as well as Norton, Vignoles and Cayuga White. Frontenac and Edelweiss continue to lead other cultivars in popularity.
- Yields of Norton, Vignoles and Frontenac were well above previous averages, confirming our evaluation that these cultivars offer promise in eastern Nebraska.
- Visits to grape growers and winery operations were implemented, with highly positive feedback from the individuals visited. In several cases, UNVP personnel

were able to provide advice that was helpful to the owners of these operations and should enhance long-term sustainability and profitability.

- Cold hardiness evaluation and relationship to growing degree day numbers, as well as length of growing season are continuing with a goal of summarizing data comparisons by 2014.

Progress Achieved According to Outcome Measures: The Nebraska grape and wine industry and the industry in the Midwest is benefitting from the UNVP research and educational programs. Growth of the Nebraska industry has progressed from the approximately 15 acres of commercial grapes and one winery to over 400 acres of vineyards and over 25 wineries, including one winery that specializes in gourmet vinegar production. The UNVP programs have been very helpful and in some cases instrumental in the successful initiation of these entrepreneurial enterprises. Science based research funded in part by grants from the Nebraska Grape and Winery Board have been instrumental in assisting the growth of this vibrant value-added industry. Feedback has been extremely positive from growers and winery operators and the synergy achieved through collaboration with the NWGGA, the NGWB and the UNVP is as strong example of what can be achieved by such positive collaboration. The accomplishments that have benefitted Nebraska's industry have also been recognized by professionals in other states (KY, CO, SD, IL, MN, KS, MO, NY) as evidenced by invitations for Dr. Read to speak at workshops and conferences to share the progress of the Nebraska industry.

Financial Report:

Budget submitted in the request for funding and included on the contract (18-13-122) Has been followed, with only minor changes. The support provided for half of the Viticulture Technologist's salary and benefits has enabled delivery of educational programs and a professional approach to maintenance of the UNVP research vineyards, enabling accurate data acquisition beneficial to the Nebraska grape and wine industry. Expenditures for fuel, travel and vehicle rental were essentially as noted in the contract, but outlays for planting stock were not necessary because the few needed plant replacements were propagated in-house or donated by commercial nurseries.

The usual agreed-upon 10% overhead surcharge mandated by the University of Nebraska was included in the overall budget.

Additional specific details of expenditures can be provided if desired.