

Project/Activity Number: NE-1720

Project/Activity Title: Multi-state Coordinated Evaluation of Winegrape Cultivars and Clones

Period Covered: November 15, 2017 to November 14, 2018

Date of This Report: January 16, 2019

Annual Meeting Date(s): November 13 and 14, 2018

Participants in attendance:

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Brief Summary of Minutes of Annual Meeting

The Annual Technical Committee meeting was hosted by Dean Volenberg of the University of Missouri Grape and Wine Institute in Columbia, Missouri on 13-14 November 2018. Meeting was called to order and the meeting agenda presented. This was followed by brief introductions of attendees.

Data Collection Committee

Tim Martinson provided an update on the data collection committee. As a whole the research conducted and data collected as part of NE-1020 has provided a rich source of information that needs to be summarized. Tim suggested some potential ways the data could be summarized. Potentially examine data of one cultivar at multiple sites as well as all varieties at one site. The question that needs to be addressed is what information would be helpful to current and future grape growers. It was suggested that 5 year averages be used as well as the following parameters be included for each variety; vine death, phenology markers (bud break, bloom, veraison, harvest maturity), growing degree data as well as fruit metrics. Fruit metrics would be presented as a range.

The large data set will require input from a statistician to determine relevant statistical tests. A large amount of data from NE-1020 still needs to be submitted to Dan Ward. Tim Martinson is currently looking at developing a website that will make entering data for NE-1720 less cumbersome.

A lot of discussion centered on what information needs to be collected that will be relevant to grape growers. Attendees suggested that the following information should be collected for each grape variety (Table 1). Additionally two other parameters were identified that should be quantified if time and labor permits (Table 2).

Table 1. Parameters to include in each grape varietal and clone evaluation.

Parameter	Metric
Year planted	Date and year
Vines	Number alive, dead ¹ , and cropped
Harvest	Calendar date, GDD at harvest starting from January 1. Daily min max temperatures
Yield	Kg/vine per rep ²
Fruit	Brix, TA, pH
Vine spacing	In-row and between row
Training system	VSP or High wire

¹If possible provide cause of vine mortality.

²Note if cluster thinning was implemented.

Table 2. Additional parameters that should be evaluated if time and labor permits.

Parameter	Metric
Phenology	Bud break, bloom, veraison. Calendar date and GDD
Pruning weights	Ravaz index

Germplasm and Discovery Committee.

Tim Martinson presented information on the availability of irradiated Vignole germplasm. A number of Vignole mutants were evaluated based on loose cluster architecture. Mutants were developed by Amanda Garris USDA. Approximately 1000 mutants were evaluated of which nine were selected for replicated trials. From these trials, Tim suggested that 2 to 3 mutants be evaluated in replicated trials in interested NE-1720 states. The following states expressed interest in evaluations; NY, MO, MD, KS, and NE. Tim will work with Amanda to get material propagated and grafted onto rootstocks for future trials. This is in congruence with Objective 3 milestone. Propagate and receive cuttings for plantings at collaborator sites.

Joe Fiola suggested other grape materials for evaluation. These included: Russian hybrids, Hungary, Bulgaria, Georgia, Uzbekistan.

Matt Clark provided an update on potential breeding lines for evaluation. These included MN1220 – white wine grape for more southern climates compared to Minnesota. The Minnesota grape breeding program is also developing seedless table grape lines that may have a dual purpose for both fresh consumption and the wine industry. The line MN1296 is currently under evaluation. Two other lines are also being evaluated and include MN1369 which has strong pineapple flavors and MN1380.

Tim Martinson on behalf of Bruce Reisch also provided an update on selections from Cornell.

NY03.0207.02 – This white wine grape has scored very well in wine tastings, with panelists mentioning bright acidity with notes of citrus, melon, apricot and peach. The vine has an

excellent large canopy, some leaf phylloxera, and will need protection from bird depredation. The prediction for 50% bud kill is -15.7 °F.

NY03.0207.06 – This white wine selection produces a good canopy with moderate resistance to foliar powdery and downy mildews. Fruit are mostly rot-resistance but some sour rot has been noted in some years. Wines have been highly ranked by tasting panels, with aromas described as melon, pear, spicy and pineapple, while the palate descriptors included good structure and body; and mentions of citrus, pineapple apple and Riesling-like characters. The predicted temperature for 50% bud kill is -16.9 °F.

NY03.0208.09 – This white wine grape has been described as having citrus, tropical fruit, peach and pear characteristics in both the aroma and palate. It has been very well-liked by tasting panels. Vines have been moderately productive with good resistance to powdery mildew. Bird damage has been a problem and protection (netting) is needed. Some years, rachis necrosis was noted just prior to harvest. The predicted temperature for 50% bud kill is -15.4 °F

NY04.0303.02 – This is a white wine grape, which produced the top-ranked white wine from vintages 2013 and 2016. Comments included muscat, peach, spicy, tropical fruit, mango, grapefruit, dried apricot, lychee, and passion fruit. The 2016 wine had Sauvignon blanc-like tropical fruit and green notes. These vines are productive and vigorous so far, with good resistance to downy and powdery mildews under a hybrid-type spray program. The predicted temperature for 50% bud kill is -15.5 °F.

NY06.0514.06 – a highly disease resistant red wine selection. This selection carries the Run1 / Rpv1 genes, as well as Ren2 (for powdery mildew resistance) from *V. cinerea*. Also has excellent resistance to bunch rot, and moderate resistance to black rot. The buds are moderately winter hardy, with expected temperature of 50% bud kill in mid-winter measured to be -16.4 °F. Vines are on the small side and grafting on phylloxera-resistant stocks should be tested. Fruit yields are low, due to the use of many clusters for crossing each year. Wine descriptors are as follows: fruity with notes of blackberry, plum, cherry; slightly herbaceous, with green pepper noted; good body and medium tannin; also some have detected chocolate notes.

Future Annual Meeting locations will be 2019 Minnesota hosted by Matt Clark, 2020 Kansas hosted by Scott Kohl, and 2021 Michigan hosted by Thomas Todaro.

Accomplishments

Short-term Outcomes: To enhance future facilitation of reporting I have taken the liberty of including the following information of subcommittees formed in 2017. Viticultural practices subcommittee chair: Joe Fiola, Data Collection subcommittee chair: Dan Ward, Outputs and Milestones chair: Tim Martinson, and Germplasm and Discovery chair: Matt Clark.

Outputs: State reports are included as appendix

Activities:

A structured wine tasting was presented by Joe Fiola and including wines made from grapes grown and vinified by Joe Fiola as well as well as wines made from grapes grown and vinified by Scott Kohl's group at the Highland Community College in Kansas. A total of 18 varietal wines were evaluated and included: Frontenac gris, Bianca, Fernão Pires, Grüner Veltliner, Pinot Blanc, LaCrescent, Albariño, Colombard, Brianna, Piquepoul, Traminette, Rougeon, Garanoir, Chambourcin, Petit Verdot, Frontenac, Fredonia and Teroldego. Attendees learned about the origin of the grape varieties as well as the performance and their viticultural characteristics.

Milestones: Six states including VT, ND, SD, KS, NY, and MD have established new plantings of grape cultivars, selections or clones. This is in congruence with Milestone objective 1 (2018). Further, other participating states will be establishing new plantings of grape cultivars, selections or clones in 2019.

Impacts

Activities: Nothing to report at this time

Milestones: Nothing to report at this time

Indicators: Nothing to report at this time

Publications:

Bradshaw, T.L., Berkett, L.P., Kingsley-Richards, S.L., and Foster, J.A. 2018. Horticultural Performance and Juice Quality of Cold-Climate Grapes in Vermont, U.S.A. *European Journal of Horticultural Science* 83:1, 42-48. Invited paper.

Bradshaw, T.L., Hazelrigg, A., and Berkett, L.P.. 2018. Characteristics of the cold-climate winegrape industry in Vermont, U.S.A. *Acta Hort.* 1205, 469-476. DOI: 10.17660/ActaHortic.2018.1205.57

Hazelrigg, A., Bradshaw, T.L., Berkett, L.P., Maia, G., and Kingsley-Richards, S.L. 2018. Disease Susceptibility of Cold-Climate Grapes in Vermont, U.S.A. *Acta Hort.* 1205, 477-482. DOI: 10.17660/ActaHortic.2018.1205.58

Loseke, B. A. 2018. Replacing Herbicides with Groundcovers to Enhance Vineyard Sustainability. PhD dissertation, Department of Agronomy and Horticulture, University of Nebraska-Lincoln. <https://digitalcommons.unl.edu/agronhortdiss/138/>

Rice, S., N Lutt, J.A. Koziel, M. Dharmadhikari and A. Fennell. 2018. Determination of Selected Aromas in Marquette and Frontenac Wine Using Headspace-SPME Coupled with GC- MS and Simultaneous Olfactometry. *Separations* 5:20; doi:10.3390/separations50100

Schoelz, J., M. Adhab, W. Qui, S. Peterson, and D. Volenberg. 2018. First report of grapevine red blotch virus in hybrid grapes in Missouri. *Plant Disease*. Accepted for publication. Posted online 10 September 2018.

<https://apsjournals.apsnet.org/action/doSearch?AllField=red+blotch+missouri>

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