



Nebraska VineLines

UNIVERSITY OF
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University of Nebraska Viticulture Program

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NWGGA Virtual Annual Meeting

The Nebraska Winery and Grape Growers Association held its annual conference and business meeting on January 24 and 25, 2021. Both the conference and the business meeting were held virtually via Zoom because the coronavirus pandemic precluded a safe in-person meeting. The Viticulture Sessions were held on January 24th and the Winery Sessions were held on January 25th.

The viticulture sessions featured Wayne Peterson presenting “Vineyard Spray Programs and Scheduling” and Paul Read, University of Nebraska Viticulture Program (UNVP) speaking about the first year of the “Crop Load and Quality Study”. Wayne described the challenges of managing diseases in Nebraska vineyards, and offered some approaches to controlling the “the big five” fungal diseases that impact Midwest vineyards. Those major fungal problems are considered to be the most serious and include Phomopsis, Anthracnose, Black Rot, Downy Mildew and Powdery Mildew. He also pointed out the importance of understanding “what is an acre” when determining spraying practices. Wayne also encouraged early ordering of necessary chemicals – don’t wait until the last minute – and considering use of the Midwest Spray Guide, which he said is greatly improved and more grower-friendly.

Paul Read described the Crop load project that the UNVP began in the 2020 growing season, explaining the rationale for crop reduction. It is “conventional wisdom” that a smaller crop may lead to more of the vine’s energies being channeled into the smaller number of clusters after crop reduction by cluster removal. In the UNVP experiments, four cultivars were treated, Itasca, Frontenac, La Crescent and Marquette. The treatments consisted of 50% cluster removal, 25% cluster removal and no cluster removal (control). Each cultivar was broken into five replications of six plants each, with two plants in each rep receiving a 50% reduction, two receiving a 25% reduction or two with no reduction, by removing clusters shortly after fruit set. Following harvest, the grapes were tested for sugar content (degrees Brix), pH, titratable acidity (TA), color analysis and sensory evaluation. Yields were negatively impacted by the difficult growing season, resulting in relatively low overall yields. The cluster removal led to predictably lower yields, by 50% and 25%, when compared with the control. Most parameters were not statistically significant, other than an increased sugar content for Itasca in the 50% reduction treatment. Detailed results were reported in the presentation and the complete presentation can be found on the UNVP web site, <https://viticulture.unl.edu>. This research project will be repeated in the 2021 growing season with more lab analyses and assessing

the economic impact of crop reduction, both for the grower and the winery.

Phylloxera in Nebraska Vineyards

A summer research project was undertaken a few years ago by an Entomology undergraduate student (Mary Foshee) in cooperation with the University of Nebraska Viticulture Program in which she examined dozens of plants at three of the UNVP research vineyards. This will be a short synopsis of the work that was conducted in the summer of 2015. One goal of this research was to evaluate a potential correlation between grape cultivars and the presence and severity of the foliar form of Phylloxera. A secondary objective was to determine presence or absence of root nodosities on a small number of older vines that had died in the previous year. The results led to the conclusion that some cultivars are more susceptible to leaf damage caused by Phylloxera than is the case for other cultivars grown in Nebraska vineyards.

Phylloxera is an aphid-like insect known as *Phylloxera vastatrix* which has the meaning “devastating leaf-dryer” because of the earliest visible symptoms of infestation. Phylloxera has an extremely complex life cycle, having both a root infesting form and a foliar form. The root form was the cause of “the great wine blight” that devastated European vineyards in the late 19th century and has caused damage worldwide in subsequent years. Although the foliar form can infest many North American grape species and many of the hybrids grown in the Midwest, the root form is rarely the cause of serious problems. However, leaves attacked by the foliar form can become greatly reduced in their photosynthetic potential and thus lead to reduced vine growth and to yield reduction. In addition, severely infested vines are aesthetically displeasing, (some say “ugly”!), making the vines unattractive to visitors, if the vines are near the winery for example.

The student rated the severity of leaf infestation on a scale of 1 to 5, with 1 being no infestation and 5 being extremely infested. Although no statistical tests were performed, it was readily apparent that some cultivars exhibited little to no infestation and others were routinely very severely infested (rated 4 or 5). The following list rates many cultivars that are important in the Nebraska industry and their average rating. In most cases, the average scores are the means of at least 6 vines.

<u>Cultivar</u>	<u>Rating</u>
Norton/Cynthiana	1.0
Edelweiss	1.0
Reliance	1.5
Prairie Star	2.0
Chardonel	2.0
Traminette	2.0
[Growers, how do these results match with observations in your vineyards?]	
Vignoles	2.1
Marquette	2.5
deChaunac	3.5
Marquis	3.8
Brianna	4.0
Chambourcin	4.0
La Crescent	4.3
Frontenac	4.8

Only three dead vines were dug up and no signs of the root form (nodosities, actual insects) were found. It was concluded that because the vines were already dead, they were no longer infested by Phylloxera, assuming that they had been infested at an earlier date, but the insects had left to attack living vines.

(NOTE: the assistance of Dr. John Foster, Entomology Professor Emeritus was of significant help in developing this project.)

NEW ITASCA FACT SHEET

(sent to the Viticulture List on Feb. 14)

The University of Minnesota has recently produced a new fact sheet on the Itasca grape which they introduced in 2017. With several Nebraska grape growers embarking on Itasca production, and the indication of slightly increased degrees Brix noted in our University

of Nebraska Viticulture Program's Crop Reduction project, this new fact sheet is timely. A few highlights:

- Fruity white wines offer notes of pear, melon, quince, and kiwifruit
- In the recent "polar vortexes", Itasca exhibited greater cold hardiness than the Frontenacs, Marquette, La Crescent and Brianna.
- Training systems: VSP, High Wire, and GDC all can work well, with HW out-yielding VSP at the UM Research Center.
- Their recommended harvest parameters: 24.7-28.2 degrees Brix, 3.04-3.31 pH, and 8.7-10.8 g/L TA.
- Pest tolerance: strong resistance to Downy Mildew and leaf Phylloxera, but Anthracnose and Black Rot problematic under warm, wet/humid conditions.

The fact sheet is found at:

https://enology.dl.umn.edu/sites/enology.dl.umn.edu/files/media/itasca_fact_sheet_0.pdf

TWO NEW PRUNING VIDEOS

From the University of Minnesota Extension Part of their growing library of pruning videos. One is on pruning new vines, and the other is an in-depth look at pruning high cordon:

- [Pruning New Vines – One or Two Years Old](#)
- [Pruning high cordon grapevines in Minnesota \(intermediate to advanced\)](#)

In addition, here are some past pruning videos we made in the last couple of years:

- [UMN Extension Grapevine winter injury](#)
- [Pruning out grapevine trunk diseases](#)

And an old one from 2010 that gives a very beginner look at pruning:

[Pruning grapevines in Minnesota](#)

WHAT HAS THE WINTER DONE SO FAR?

Bud hardiness is always a concern, even in what seems to be mild winters. Here is a snapshot of bud hardiness of a few select cultivars. Data based upon 30-plus bud samples for each cultivar. Vines were harvested from the Lincoln area on January 29, allowed to come to room temperature, and sliced on January 30, 2021. Outlying vineyards will likely have differing values, but this "snapshot" may be instructive for comparison purposes.

Cultivar	% live	% live	% dead
	primary buds	secondary buds	buds
Delaware	100	100	0
Edelweiss	89	97	1
Frontenac	100	100	0
La Crescent	88	100	0
Leon Millot	96	99	1
Marquette	100	100	0

Of course, we're not out of the woods yet, but as we get closer to Spring, de-acclimation may begin to occur and then our most pressing problem may be early bud break followed by plummeting temperatures causing damage to newly emerging shoots. Let's hope for gradually increasing temperatures as spring approaches, with no late cold temperature events after bud break.

Cheers, Paul

Reminder Calendar:

March 2-4, 2021 - 2021 Cold Climate Grape Grower Webinar **FRAME Workshop (spray program) - Registration available soon.**

March 3-5, 2021 - B.E.V. (Business - Enology - Viticulture) NY: A virtual conference from Cornell. The home page is <https://www.bevny.org/> The Program can be found at <https://www.bevny.org/program2> Cost to virtually attend is only \$75 per person, or \$100 per person to include recordings of the program.

March 24, 2021 - 2021 Cold Climate Grape Grower Webinar Economics of Establishing a Small Vineyard - Miguel Gomes, Cornell University. z.umn.edu/VineDollars

April 14, 2021 - 2021 Cold Climate Grape Grower Webinar a Sprayer - Peter Larbi, UC Davis. z.umn.edu/Sprayer1

May 5, 2021 - 2021 Cold Climate Grape Grower Webinar Sprayer Tank Mixing - Jason Deveau, a.k.a. "The Spray Guy" z.umn.edu/Sprayer2

May 19, 2021 - 2021 Cold Climate Grape Grower Webinar Bud break – Focus topics: Weeds, disease, planning your bird control strategy. z.umn.edu/Bud21

June 2, 2021 - 2021 Cold Climate Grape Grower Webinar Bloom – Focus topic: Japanese beetles.
z.umn.edu/Bloom21

July 7, 2021 - 2021 Cold Climate Grape Grower Webinar Mid-season – Focus topic TBD. z.umn.edu/Canopy21

August 4, 2021 - 2021 Cold Climate Grape Grower Webinar Pre-harvest – Focus topic TBD. z.umn.edu/Brix21



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