



Nebraska VineLines

UNIVERSITY OF
Nebraska
Lincoln | EXTENSION

University of Nebraska Viticulture Program

Editors: Dr. Paul Read, Professor of Horticulture & Viticulture and
Stephen J. Gamet, Department of Agronomy & Horticulture

March 2020
Issue XXIII- 1

SPRING HAS SPRUNG (OR HAS IT?)

The calendar says that Spring arrives on March 20, 2020, but spring-like weather has prevailed recently and may have caused our grapevines to have become ready (or nearly so) to break bud and begin growth. Indeed, the Nebraska State Climate Office reports that February was warmer and drier than normal, suggesting that perhaps the buds could break soon. However, we Nebraskans know that we can still experience cold weather, possibly severely cold, as we turn the pages of the calendar. If bud break occurs early, Mother Nature's "freeze-dryer" may cause serious injury to newly emerging shoots and thus potentially reduce or nearly eliminate the 2020 crop.

What does this mean to our vineyards? We can hope for some consistently cooler weather to delay bud break of course, but some practical measures such as long pruning, spraying with materials such as Amigo oil to delay bud break and preparing for modifying temperatures in the vineyard should be considered. Without going into detail here, I suggest reading the excellent summary, "Vineyard Frost Protection", that Cain Hickey (University of Georgia's Extension Viticulturist and former assistant to Virginia Tech's Tony Wolf) has prepared: <https://site.extension.uga.edu/viticulture/2020/03/vineyard-frost-protection-considerations/> The foregoing options and other alternatives are covered well in Cain's article, together with in-depth explanations of the difference between **Advection Freeze** and **Radiation Frost**, passive vs. active frost protection, an explanation and depiction of temperature inversion, and analysis of the usefulness of various preventive and remedial measures one can take to deal with the potential problem of cold temperature events in the vineyard. An excellent list of references is provided. (Editor's note:

although Cain refers to *Vitis vinifera* examples such as Chardonnay and Pinot Noir, the principles espoused in his article apply equally well to Nebraska vineyard management.)

GRAPEVINE TRUNK DISEASE (GTD) REVISITED

Following Richard Smart's clarion call to be alert to the existence of trunk diseases and his strongly worded recommendations for prevention and management, your University of Nebraska Viticulture Program (UNVP) conducted evaluations of hundreds of vines prior to terminating the UNVP research planting at Nebraska City in the summer of 2018. The results illustrated that nearly all of the vines were seriously impacted by grapevine trunk diseases. We presented these results at the 11th International Grapevine Trunk Disease Conference in Penticton, British Columbia, Canada, and a summary (including photographs) was included in the November issue of the Wine Business Monthly (see: "Trunk Diseases and Winter Injury in North America: How are they related?" by Smart, Barriault, Read and Volenberg, pp 76-83, WBM November, 2019). We are continuing evaluation of GTD in our research vineyards and also examining the presence or absence in native *Vitis riparia* ("wild" grapevines).

As a further follow-up to the concerns raised about GTD, Cornell researchers published an article in early March, 2020, "Missing Parts: The cost of missing cordons, canes" by Van Zoeren, Martinson, Caldwell and Walter-Peterson. In this article, they document the costs not only of missing cordons and canes, but also the costs associated with missing vines. They related some of the losses (costs) to crown gall (*Agrobacterium vitis*), but also to *Eutypa* dieback, *Phomopsis* canker and *Botryosphaeria* canker; the latter three are considered to be some of the causes of GTD. Their data were

based upon evaluation of sixty-one 300-vine blocks in 17 commercial vineyards and estimated losses for median vineyards ranged from \$162 per acre for “native” cultivars (e.g. Concord), \$317 for hybrids (e.g. Cayuga White) to \$1312 for vinifera. See link at Appellation Cornell:

https://grapesandwine.cals.cornell.edu/newsletters/appellation-cornell/2020-newsletters/issue-40-march-2020/grapes-101/?utm_source=Appellation+Cornell+%2340&utm_campaign=Appellation+Cornell+%2340&utm_medium=email

PRUNING 101 – Saturday, April 4

Pruning advice for beginners will be provided at a half-day field day at the University of Nebraska Viticulture Program’s East Campus plantings on Saturday, April 4, beginning at 9am. Although this field day is intended to assist new growers and would-be grape growers, it may serve as a refresher for growers with various levels of experience. It also should be helpful to people with home grape plantings. University of Nebraska Viticulture Program staff will be on hand for advice and demonstrations.

What? Practical pruning advice and hands-on experience

When? Saturday, April 4, from 9am to noon (drop in at any time between 9 and noon)

Where? The University of Nebraska Viticulture Program vineyard, East Campus (southeast of the Law College)

Cost? Free! (Bring your own pruning shears and coffee; free doughnuts while supplies last!)

WHAT’S TRENDING?

A FEW THOUGHTS BASED UPON RECENT COMMUNICATIONS:

- Reducing Vine Size by Root Restriction. Research conducted at Virginia Polytechnic Institute and State University has demonstrated that grapevines grown in in-the-ground root bags restricts the growth of the above-ground portion of the grapevine. This system reported in the March 2020 issue of the American Fruit Grower may be of interest to Nebraska grape growers that experience serious imbalance between vegetative growth and fruit production; it is another way to slow down excessive vine vigor.
- Preventing Smoke Taint. Although smoke taint caused by forest/bush fires has become a serious problem in California and Australia, it may be of interest to Midwest growers and wineries because of occasional serious or extensive grass

fires. University of British Columbia researchers have discovered that applying an agricultural spray containing phospholipids – commonly used to combat cracking in cherries – to wine grapes about one week before exposure to smoke can reduce the potential smoke taint caused by smoke-induced volatile phenols.

- Ultraviolet Light for Disease Control? Although there is a measureable amount of ultraviolet (UV) light naturally occurring from normal sunlight (that’s what contributes to your skin tanning or to sunburn), it is insufficient to combat pests and diseases of the grapevines. However, recent research by Cornell University plant pathologists and agricultural engineers has demonstrated that high levels of UV can combat powdery mildew (*Erysiphe necator*), although when applied in the daytime, such high levels caused serious damage to the leaves. The break-through in this research was the discovery that the disease can be controlled by lower levels of UV when applied at night without causing plant damage.
- Canned Wines? According to Cornell researchers, sales of wine in aluminum beverage cans have grown over 30-fold from 2012 to 2018. They also have explored the possibility of off-flavors occurring in wines sold in such cans and have concluded that although such problems are seldom encountered, there is the possibility of hydrogen sulfide (H₂S, “rotten egg” smell) to occur in canned wines. Their work shows that this is related to the reaction of SO₂ with the aluminum. They suggest “opportunities exist for further extending the shelf life of wine in cans by focusing on the interaction of SO₂ and the can liner.” Marketing Nebraska wines in cans has recently become a part of the expanded wine profile found on retailers’ shelves, so this information may be relevant.
- Portable Imaging of Bud Mortality. Cornell and Pennsylvania State University are collaborating on development of a system that may enable a grower to attach an imaging system to an ATV that can be driven through a vineyard and identify live and dead buds. It is projected that such a system could be of assistance to guide pruning practices. Further efforts are underway to explore the possibility of an autonomous self-drive ATV equipped with the imaging system, which could then collect data on bud viability.
- In reviewing climate data for eastern Nebraska, we have noted that there were precipitous drops

in temperatures during the period of November 10-12, 2019. For example at the UNVP Peru vineyard, temperature highs were 71 on November 9, and 57 on November 10, and dropping to lows of 7.5 on November 11 and 2.7

on November 12. These rapid temperature drops may help explain bud and cane injury noted by some Nebraska growers to marginally hardy grapevines such as Chambourcin and Cabernet Franc.

Reminder Calendar:

March 28, 2020 NWGGA's Spray Program Planning and Evaluating your vineyards; Fertility, Grower Workshop, Thorpe Opera House, 457 D St., David City, 9:00 to 3:00 [Register Here](#)

April 4, 2020 9:00 t Noon The University of Nebraska Viticulture Program vineyard, East Campus (southeast of the Law College). Free, but bring your own shears.

May 15-16 TOAST Nebraska Wine Festival, Vala's Pumpkin Patch, Gretna, NE, For more information and to register go to toastwinefest.com

June 2 NWGGA Topic: Tannins and Wood Alternatives, 10:00am at Capitol View Winer. For more details see <https://www.nebraskawines.com/wp-content/uploads/2020/01/2020-NWGGA-Newsletter-WINTER.pdf>

July 12-17, 2020, International Cool Climate Wine Symposium -CCOVI at Brock University –St. Catharines, Ontario, Canada. Details: <http://iccws2020.ca/>



Extension is a division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the counties and the United States Department of Agriculture. University of Nebraska–Lincoln Extension educational programs abide with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States of America.