

Vine news

Viticulture Information News, Week of 6 July 2020 Columbia, MO



Berry Cracking

I have received a lot of pictures the last couple of weeks of cracked berries (Figure 1). Grape growers are wondering what has happened and what is causing the cracking. In most all cases of early season berry cracking the cracking of berries is the result of environmental factors interacting with the berries.

There are three main environmental factors that have a role in berry cracking. High berry temperatures result in reducing the strength of the berry skin, the berry expands, and the berry skin surface area shrinks. This results in berry cracking. Berry clusters that are shaded by the canopy often do not experience berry cracking as the canopy reduces berry temperature.



Figure 1. Berry cracking is often the result of an interaction with environmental conditions and a cultivar. Powdery mildew as well as calcium deficiency can also play a role in berry cracking. Photo credit: A. Sporleder submitted 7.8.2020

High relative humidity especially at night can result in berry cracking. During the nighttime plant transpiration from the grapevine leaves is reduced compared to the daytime. At night time the grape berries continue to transpire and this increases turgor pressure on the berry skins and results in berry cracking. During the day the leaves are transpiring high amounts of water and this lessens the turgor pressure on the grape berry skins.

Rain or heavy dew can induce berry cracking. Water can enter the berry by root uptake via transpiration. In vineyards that have experienced a drought period followed by a heavy rainfall event, this can result in increased turgor pressure on the berry skin resulting in cracking. Water can also enter a berry by two other mechanisms. Water can enter a berry by moving across the berry skin or water can enter from the berry stem receptacle with the water moving in due to transpiration of the berry. At present time the mechanism causing the water to move into the berry from receptacle has not been elucidated.

Other factors have been identified that cause fruit cracking besides environmental conditions. Powdery mildew infections on the berry skins cause microfractures in the cuticle making the berries prone to cracking. Calcium deficiency has also been implicated in berry cracking. Calcium is important in maintaining the integrity of cell membranes. In addition, calcium plays a role in the membranes structure and regulates water permeability of the membrane. When calcium is deficient cell membranes deteriorate.

Good viticulture practices that begin with site selection will often alleviate berry cracking. Vineyard sites that shed water quickly and have well drained soils will lessen the impact of large rainfall events. Limiting canopy management, especially the removal of leaves that exposes fruit berries to intense sunlight and high temperatures can reduce berry cracking. Monitoring grapevine calcium levels at bloom can determine if a calcium deficiency exists. Calcium deficiencies can be corrected with foliar applications of calcium. Berry cracking can also be inherit to a cultivar such as Vignoles which the berries often crack near harvest as a result of a rainfall event.

Birds Eye Rot Caused by Anthracnose *Elsinoe ampelina*

Anthracnose can be a fruit rot (Figure 2), shoot disease, leaf disease and infect any green tissue on the grapevine. In warm wet growing season's Anthracnose is often more prevalent. If your grapevines or berries are infected with Anthracnose it is important to control the disease. The primary infections will produce fruiting structures that will produce spores during warm wet periods resulting in secondary infections.

Anthracnose of grapes for some unknown reason has been classified as a southern disease in the USA. Even though infections can take place during wet periods when the air temperature is 36° F. As air temperatures increase the disease development increases. At 90° F and wet conditions the time period from infection until symptoms appear is only 4-days.

At this period in the growing season, Anthracnose can be prevented with Captan as well as other fungicides such as Strobilurins. If your vineyard is severely infected with Anthracnose this season, you will need to consider a management plan for next year. Next season, prior to budburst (delayed dormant application) consider applying liquid lime sulfur or Sulforix for early season control. Also, during the dormant pruning season prune out any cane wood that is infected with Anthracnose. Remove the infected cane wood from the vineyard and destroy the infected cane wood by burning or burying.



Figure 2. Birds Eye rot caused by Anthracnose *Elsinoe ampelina*. Photo credit: Robert Balek, MU Extension Horticulture Field Specialist 7.9.20



ISU/UMN Joint Research and Winemaking Webinar Series:

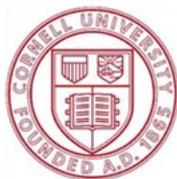
Cellar Sanitation

Prior to the beginning of the grape harvest season, it is necessary to clean and sanitize the winery cellar to maintain wine quality, production consistency, and the long-term winery reputation. **Cory Marx** (UC Davis) and **Luke Holcombe** (Scott Laboratories) will present this topic during the first 1-hour webinar on **August 4, 2020 at 3PM Central**



Proper & Practical Use of SO₂

In the second 1-hour webinar the importance of sulfur dioxide, and good SO₂ management in the winery, will be presented and discussed by **Dr. Gavin Sacks** (Cornell University) and **Katie Cook** (Scott Laboratories) on **August 18, 2020 at 3PM Central**



These two free webinars are co-organized by Dr. Aude Watrelot, Assistant Professor of Enology at Iowa State University and Drew Horton, Enology Specialist at the University of Minnesota's Grape Breeding & Enology Project.

Two 1-hour webinars scheduled as follows:

- **August 4th 2020: Winery Cleaning and Sanitizing**
 - 20-minute presentation of the practical aspects of cleaning and sanitizing in a winery by Luke Holcombe from Scott laboratories.
 - 20-minute presentation of a recent work carried out at UC Davis by Cory Marx under the supervision of Dr. Anita Oberholster. This presentation will focus on a method for optimizing the use of chemical agents for cleaning and sanitation.
 - 15-minute *Questions and Answers* moderated by Dr. Aude Watrelot and Drew Horton.

To register:

<https://iastate.webex.com/iastate/onstage/g.php?MTID=ef1fa65a9a75d6bcacb28617892594c91>

- **August 18th 2020: Practical Management of Sulfur Dioxide**
 - 20-minute presentation on the definition of sulfur dioxide, the forms of sulfites, differences between free, bound and total SO₂, the importance of SO₂ in winemaking and a new method to measure SO₂ by Dr. Gavin Sacks from Cornell university.
 - 20-min presentation on the practical aspects of the management of sulfur dioxide in a winery by Katie Cook from Scott laboratories.
 - 15-minute *Questions and Answers* moderated by Dr. Aude Watrelot and Drew Horton.

To register:

<https://iastate.webex.com/iastate/onstage/g.php?MTID=e98abcc780dd31e367335e36914084d1e>

For further details or any questions, check out the Wine Industry Events in Dr. Watrelot's website <https://faculty.sites.iastate.edu/watrelot/> or contact us at watrelot@iastate.edu and dhorton@umn.edu

Was your vineyard damaged by frost freeze events in April and May 2020.

If so take this survey to help inform the Missouri Wine and Grape Board.

[Survey Link](#)

Dear Missouri Winery owner:

A number of vineyards in Missouri were negatively impacted by frost/freeze events that occurred in April and May, 2020. As the Viticulture Extension Specialist for the University of Missouri Grape and Wine Institute, I am surveying wineries to quantify the impact of the frost/freeze events on sourcing grapes in 2020. Results of the survey will help the Missouri Wine and Grape Board determine if a declaration should be moved forward within state government allowing Missouri wineries the opportunity to source grapes or juice from outside of Missouri. The survey is completely confidential and your responses will not identify you. The survey will only take a couple of minutes to complete. Thanks for your time and support of the Missouri grape and wine industry.

Cumulative Growing Degree Days (base 50) for the Seven Grape Growing Regions of Missouri from April 1 to July 4, 2020.

Region	Location by County	Growing Degree Days ¹		
		2020	2019	30 Year Average
Augusta	St. Charles	1439	1542	1546
Hermann	Gasconade	1377	1515	1477
Ozark Highland	Phelps	1500	1624	1587
Ozark Mountain	Lawrence	1484	1587	1564
Southeast	Ste. Genevieve	1474	1598	1608
Central	Boone	1483	1555	1511
Western	Ray	1427	1432	1464

¹Growing degree days at base 50 from April 1 to July 4, 2020. Data compiled from Useful and Useable at <https://mrcc.illinois.edu/U2U/gdd/>. Click on link below to determine growing degree days in your area.

To determine the number of growing degree days accumulated in your area since April 1. [Use this tool.](#)

Weather Outlook for Weekend

- Above normal air temperatures
- Heat index 95 to 105° F

July 8-13

- Areas of Missouri could see 0.5 to 1-inch of rain

July 13-17

- Above normal temperatures forecast
- Below normal precipitation forecast

July 15-20

- Excessive heat and humidity with heat indexes in the 100's

Please scout your vineyards on a regularly scheduled basis in an effort to manage problem pests. This report contains information on scouting reports from specific locations and may not reflect pest problems in your vineyard. If you would like more information on IPM in grapes, please contact Dean Volenberg at 573-882-0476 or 573-473-0374 (mobile) or volenbergd@missouri.edu