In The Vineyard

Hans Walter-Peterson

Article Links

As with so many things in life, the good times can only last so long. We're at the end of another brilliant September, with an incredible stretch of mostly sunny and dry conditions that gave us some of the best harvest weather than many can remember for quite some time. Big changes arrived on Tuesday and Wednesday this week, though, with 3" of rain falling at at the Teaching Vineyard in Dresden this week, and the forecast is calling for cool and cloudy conditions for at least the next several days.

Whenever we have a storm during harvest, there is concern about all that water in the soil causing berries to swell and split open, which can most importantly lead to the development of botrytis and sour rot in injured berries, but can also result in the loss of sugars and yield as well if enough berries are affected.

Several years ago, Dr. Markus Keller from Washington State, along with a couple of colleagues and graduate students, started looking into the effects of late irrigation on grape berries, and just how water moved into and out of berries during the growing season. One of their experiments was to take well-watered grapevines and place them into a pressure chamber and increase the pressure to the root system, causing water to push up into the plant which would essentially simulate a vine with virtually no water stress through the vascular system (they would apply enough pressure to ultimately cause water to emerge from the edges of the leaves). They attached very sensitive sensors to the berries on these vines to detect changes in berry diameter under this rapid "well-watered" condition, and found that berry diameter did not increase at all – in fact, it actually slightly decreased in some berries. They found that berries have methods of moving water in and out through the vascular system during ripening, which may partly explain why the berries are less sensitive to plant water status changes after veraison.

These studies were done on both Merlot and Concord grapes, and while neither variety showed an increase in diameter during this experiment, they did see some Concord berries begin to crack when the root pressure was increased, despite the lack of any change in diameter. Merlot berries, on the other hand, did not crack at all, indicating that there are varietal differences regarding berries' tendencies to split after heavy rains.

What seemed to have a more direct impact on the splitting of berries was the movement of free water through the berry skin. They simulated this by soaking berries in water, and found that water easily penetrated through the skin and caused berries to split. Once berries cracked, then they observed increases in berry size and decreases in sugar content of those berries due to dilution.

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From a practical standpoint, the results from this research would suggest that growers may be able to reduce the potential for fruit splitting after big rains like we just had by doing what we always recommend to improve disease control on clusters – make sure that they have adequate exposure to sun and air movement to allow them to dry more quickly, which can prevent water from entering into the berries through the skins.

Just some food for thought while you're waiting for your crop to dry out…

References:

Keller, M. 2008. Pre-harvest Irrigation Dilutes Grape Quality! Or Does It? *WSU Wine and Grape Research and Extension Newsletter* 18(1): 10-11. http://winegrapes.wsu.edu/Newsletters/vol18-1-2008.pdf

Keller, M., J. P. Smith, and B. R. Bandada. 2006. Ripening grape berries remain hydraulically connected to the shoot. *Journal of Experimental Botany* 57: 2577-2587.

IPM

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As I mentioned earlier, getting 3" of rain in two days during harvest could be problematic from a disease standpoint if berries start to split. We all know that bunch rots have a much easier time of establishing and spreading if there are injured berries present. Fortunately, we are expecting fairly cool temperatures to be around for a while, which should help to slow disease development if it gets cranking away this week thanks to the rain.

If sour rot starts to develop during the next several days, consider again the information presented in last week's Update and Wayne Wilcox's 'Sour Rot Recap' article in our September newsletter. If fruit flies are present (and they probably will be if there's sour rot developing), it could be worth making an insecticide application to keep their numbers down and keep the disease from spreading further. The following materials are listed in the NY/PA Grape IPM Guidelines to control fruit flies, and have reasonable PHI intervals for this point in the season:

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Material	Pre-Harvest Interval	Comments
Delegate WG	7 days	2(ee) recommendation in NY for spotted wing drosophila specifically.
Entrust SC	7 days	2(ee) recommendation in NY for Spotted wing drosophila specifically.
Mustang Max	1 day	2(ee) recommendation in NY to include SWD.
Malathion 5EC, Malation 57%, Malation 8 Aquamul	3 days	2(ee) recommendation in NY for all 3 products. Be sure to check labels to make sure drosophila is included.

Upcoming Events

Don't forget to check out the calendar on our website (http://flgp.cce.cornell.edu/events.php) for more information about these and other events relevant to the Finger Lakes grape industry.

2015 Families in Business Across Cornell

October 8-9, 2015

Statler Hotel and Sage Hall

Cornell University

Ithaca NY

This celebration on the Cornell campus will showcase the range and impact of family enterprise, from entrepreneurs to global enterprises and legacy families. Business owners, alumni, family business affiliates and students are all invited to take part in this day-long series of keynotes, networking and workshops. Attendees will be able to connect with peers and expand their network during the height of fall foliage season.

Registration and conference information is available at http://events.cornell.edu/event/2015_families_in_business_across_cornell.

Upcoming Events (continued from page 3)

Brewing Science and Technology Short Course

October 16, 2015

Jordan Hall Auditorium

NY State Agricultural Experiment Station

630 W North Street

Geneva NY

This short course will be presented by Karl Siebert, who spent over 18 years in the brewing industry and who has received multiple awards from brewing organizations.

This short course will cover barley, malt, hops, brewing water, adjuncts, brewhouse operations, brewing yeast and brewery fermentations, maturation, finishing and beer styles.

The short course will cost $180, which includes meals and handouts. More information about the course and a link to on-line registration can be seen at http://events.cals.cornell.edu/brewingoct2015.

2015 Cornell Agribusiness Strategic Marketing Conference:

Developing Your Brand and Marketing Strategies to Increase Sales

November 16-17, 2015

Henry A. Wallace Visitor and Education Center at the

Franklin D. Roosevelt Presidential Library and Museum

4079 Albany Post Road

Hyde Park, NY 12538

For conference and registration information, please visit http://dyson.cornell.edu/outreach/strategic-marketing-conference.

2015 GDD & Precipitation

FLX Teaching & Demonstration Vineyard – Dresden, NY					
Date	**Hi Temp (F)**	**Lo Temp (F)**	**Rain (inches)**	**Daily GDDs**	**Total GDDs**
9/23/15	75.1	51.2	0.00	13.2	2724.4
9/24/15	75.9	53.1	0.00	14.5	2738.9
9/25/15	76.1	53.8	0.00	15.0	2753.9
9/26/15	72.7	51.8	0.00	12.3	2766.1
9/27/15	75.6	51.7	0.00	13.7	2779.8
9/28/15	71.3	59.7	0.02	15.5	2795.3
9/29/15	71.6	65.3	1.17	18.5	2813.7
Weekly Total			**1.19”**	**102.5**	
Season Total			**21.61”**	**2813.7**	

GDDs as of September 29, 2014: 2538.9

Rainfall as of September 29, 2014: 22.42”

Seasonal Comparisons (at Geneva)

Growing Degree Days

	2015 GDD [1]	Long-term Avg GDD [2]	Cumulative days ahead (+)/behind (-) [3]
April	40.8	65.2	-7
May	408.4	248.6	+8
June	444.9	481.5	+5
July	606.8	640.6	+3
August	572.0	588.6	+3
September	486.1	347.6	+34*
October		105.5	*
TOTAL		2477.6	

[1] Accumulated GDDs for the month.

[2] The long-term average (1973-2014) GDD accumulation for that month.

[3] Numbers at the end of each month represent where this year’s GDD accumulation stands relative to the long-term average. The most recent number represents the current status.

* As of September 23, we surpassed our average GDD accumulation for April 1 – October 31.

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2015 GDD & Precipitation (continued from page 4)

Precipitation

	2015 Rain [4]	Long-term Avg Rain [5]	Monthly deviation from avg [6]
April	2.54"	2.90	-0.31"
May	2.97"	3.11	-0.14"
June	7.28"	3.60	+3.68"
July	3.27"	3.42	-0.15"
August	2.25"	3.17	-0.92"
September	3.14"	3.63	
October		3.25	
TOTAL		23.08"	

[4] Monthly rainfall totals up to current date

[5] Long-term average rainfall for the month (total)

[6] Monthly deviation from average (calculated at the end of the month)

Additional Information

Got some grapes to sell? Looking to buy some equipment or bulk wine? List your ad on the NY Grape & Wine Classifieds website today!

Become a fan of the Finger Lakes Grape Program on Facebook, or follow us on Twitter (@cceflgp). Also check out our website, "The Grape Lakes – Viticulture in the Finger Lakes" at http://flg.cce.cornell.edu.

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