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Grapes News

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Introducing Myself to You

Greetings growers and welcome to the first edition of the Eastern New York Commercial Horticulture Program (ENYCHP) grape newsletter. My name is Jim O'Connell; I am the berry and grape educator for Cornell Cooperative Extension. I split my time between two teams: the local county Ag team in Ulster County and the regional Eastern NY team. I am new to this position, having been with Cornell Cooperative Extension for about a year and half now.

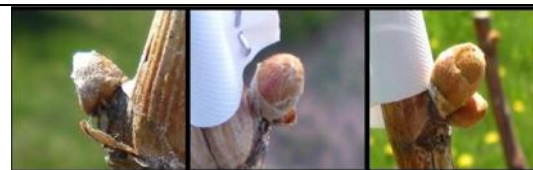
My background is in horticulture, working with various small fruit as an undergraduate at the University of New Hampshire and with cranberries as a graduate student at UMass Amherst. I am continuing to learn about grape production in the Hudson Valley and will use this information to further the development of the grape program. As this program progresses, I would like to hear from you (the growers) about some of the critical issues you face in the industry. Last season, I made it out to many farms for visits, pest monitoring and troubleshooting. I know I have not met everyone yet. I will be out an about again this season, visiting farms, introducing myself, and monitoring for pests.

If you have a question or just want to introduce yourself to me, feel free to call (845-691-7117), email (jmo98@cornell.edu) or stop by (Hudson Valley Laboratory in Highland, NY). -JMO



Grape Phenology: Grapes buds are still in the dormant stage. Sap is flowing though and with the warmer weather on the way, it won't be long before bud swell.

Pest Alerts: Currently no alerts.



Dormant Early Bud Swell Late Bud Swell

Photo from Vineyard IPM Scouting Report, week of 5/3/10, Univ. of WI Ext. Door Co. and Peninsular Ag. Research Sta., Sturgeon Bay, WI

How Cold Has it Been?

With some pulling of Growing Degree Days (GDD) (base 50, starting Jan. 1) data from weather stations in the ENY region you can see that right now, we are much colder than we were at the same time last year and even more so when compared to 2012.

| GDD Data Base 50 Accumulation starting Jan. 1 | | | | |
|---|-------|-------|-------|-------|
| | Jan 1 | Feb 1 | Mar 1 | Apr 1 |
| Ulster Co. | | | | |
| 2014 | 0 | 0 | 0 | 2.1 |
| 2013 | 0 | 0 | 1.8 | 84.1 |
| 2012 | 0 | 0 | 121 | 215.5 |
| Albany Co. | | | | |
| 2014 | 0 | 0 | 0 | 3.1 |
| 2013 | 0 | 0 | 0 | 48.5 |
| 2012 | 0 | 0 | 100.5 | 172 |
| Clinton Co. | | | | |
| 2014 | 0 | 0 | 0 | 0 |
| 2013 | N/A | N/A | N/A | 37 |
| 2012 | N/A | N/A | N/A | 130.5 |

Each number is what was accumulated as of the FIRST of the month listed. For more data go to www.newa.cornell.edu. -JMO

Average heat accumulation is often referred to as Growing Degree Days (GDD). The summation of daily GDD units can be used for a variety of things:

- comparing one region to another,
- comparing one season to another, and
- predicting important stages in plant and insect development.

Winter Injury and Bud Mortality

This past 2013 winter was difficult for everyone. Bad road conditions and heavy snowfall resulted in delays and closings for many businesses and schools throughout the region. For some, access to vineyards was limited to snow shoeing, because the snow was too deep for vehicles and equipment. These were the more visible or tangible impacts of this past winter. What was less known or seen, until recently, was the impact of the low winter temperatures on grape buds, especially in *vinifera* grapes.

The Hudson Valley is home to many *vinifera* grapes and in most winters the low temperatures do not cause severe damage to the buds. However, 1 out of every 10 years, there is an extreme winter event, which may cause severe injury to grape buds. This past winter with low temperatures that varied across the region was one of those extreme events. In some areas, such as the Hudson Valley Laboratory, a low temperature of -4°F in early January was concerning for some of the tenderer *vinifera* varieties. However, in other areas, such as Modena, where low temperatures of -8°F and -13°F were recorded during that same time period, as well as temperatures of -4°F and -7°F in mid-February, the concern was for hardier *vinifera* cultivars and not just the sensitive varieties. Depending on the vineyard location and condition of the vines heading into this winter (i.e. healthy, stressed, etc.) damage may range from minor to severe.

There are a couple of ways growers can estimate bud mortality. The first is an instrument used by researchers at Cornell and across the country, which gives an empirical measurement of the temperature range at which buds freeze. In New York State, grape buds were collected from the major grape growing regions every two weeks from December through March. They were subjected to differential thermal analysis (DTA), with approximately 30 buds total from the first 8 nodes of at least 5 canes per variety at each sampling date. The end results are often expressed as LT50 (Lethal Temperature 50), or the median temperature at which the buds that were tested froze. It provides growers with a general assessment of bud hardiness by region and cultivar. Growers can match this data to temperature data to get a rough indication of how much damage their vineyard may have. The other way to assess damage, and the only way to assess damage at a specific site, is by collecting samples from the vineyard and physically cutting into and examining the buds. This process will be described in greater detail in other articles in this newsletter.

The full results of the bud hardiness predictions can be found here: <http://grapesandwine.cals.cornell.edu/cals/grapesandwine/outreach/viticulture/weather.cfm> - JMO

Tables show 2014 bud damage and bud survival data. Samples are from Hudson Valley Lab (HVL) in Highland, NY and also from surrounding areas

Bud Damage - 2014 Lower Hudson Valley (Excluding HVL)

| Variety-Vinifera | Samples Collected | Range of Bud Damage (%) | Average % Primary Bud Damage |
|------------------|-------------------|-------------------------|------------------------------|
| Cabernet Franc | 5 | 27-100 | 71 |
| Chardonnay | 4 | 20-89 | 41 |
| Pinot Noir | 4 | 20-90 | 53 |
| Riesling | 3 | 21-55 | 36 |

*Samples are out of 50 buds

Bud Survival – April 2014 Vinifera HVL

| Variety - Vinifera | % Alive Primary | % Alive Secondary | % Alive Tertiary |
|--------------------|-----------------|-------------------|------------------|
| Cab franc | 61 | 76 | 87 |
| Cab sauvignon | 73 | 83 | 89 |
| Chardonnay | 80 | 85 | 92 |
| Merlot | 42 | 77 | 86 |
| Pinot noir | 69 | 73 | 77 |
| Reisling | 71 | 81 | 86 |
| Syrah | 21 | 47 | 64 |

Bud Survival – April 2014 Hybrids HVL

| Variety - Hybrids | % Alive Primary | % Alive Secondary | % Alive Tertiary |
|-------------------|-----------------|-------------------|------------------|
| Chelois | 83 | 87 | 90 |
| Diamond | 94 | 93 | 97 |
| GM322 | 95 | 100 | 100 |
| Noiret | 69.5 | 89 | 95 |
| Seyval | 90 | 95 | 90 |
| Vidal | 70 | 95 | 96 |
| Vignoles | 62 | 84 | 85 |

Evaluating Bud Injury and Adjusting Pruning

Source: *Northern NY Grape Management Update, Vineyard Updates for the North Country*. Available online at <http://blogs.cornell.edu/nmygrapeupdate/>.

Evaluate Injury in Your Vineyard: I recommend that growers collect canes and cut a sample of buds to determine whether the primary and secondary buds are alive or dead. This is relatively simple to do, but works better if you bring the canes inside and place in a warm environment for 24-48 hours before cutting buds.

A video entitled Evaluating bud injury prior to pruning (Part I <https://www.youtube.com/watch?v=RHJ5mY3fAs> and Part II <https://www.youtube.com/watch?v=eWtr0jzI2Dk>) is posted at our Bud Hardiness Data page (<http://grapesandwine.cals.cornell.edu/cals/grapesandwine/outreach/viticulture/weather.cfm>), and a detailed article, Assessing Winter Cold Injury to Grape Buds (<http://www.fruit.cornell.edu/grape/pool/winterinjurybuds.html>) is posted online at our Cornell Fruit Pages.

Here are the steps:

- **Collect a sample of canes from your vineyard.** Choose medium diameter, well-exposed canes that are similar to the ones you would retain after pruning. Collect enough to evaluate the first 6-8 buds from the base of the canes on 6-10 canes.
- **Bring inside for 24 hours:** Place canes in a warm place, so that differences between live and frozen buds are easier to distinguish.
- **Cutting:** Use a single-edged razor blade to cut about 1/3 of the way down the bud, parallel to the cane.
- **Evaluate:** Live buds will have bright green tissue. Dead ones will either be black/dried out (for old injury) or the color of cooked asparagus (if recently frozen). You can, with successive cuts, evaluate the primary, secondary, and even tertiary buds. Often the primary (largest) bud will have injury, but secondaries will be alive.
- **Percentage of Injury:** After evaluating 50-100 buds from each vineyard or portion sampled, calculate the proportion or percentage of bud injury.



Grape bud with injury to the primary bud (blackened center spot), but with live secondary (green bud above blackened primary) and tertiary (green bud below blackened primary) buds. Credits: Jim O'Connell

Adjust Pruning: You can compensate for bud injury by adjusting pruning intensity. General rule of thumb is: if <20% of buds are injured, you don't need to leave extra buds. If bud injury is between 20% and 80%, leave an additional amount of buds equal to the bud injury. For example, if 35% of buds are injured, leave 35% more buds. With more than 80% injury, it's prudent to only remove shoots that would intrude into the adjacent vine space, to maintain vine separation.

Double pruning: Another way to adjust pruning is to leave longer spurs or more spurs and then wait until budburst to adjust shoot number. For example, you could leave 8-bud spurs (canes, really) and then trim them back after budburst.

Trunk renewal: It will be prudent this year to think about trunk renewal and replacement. Leave a few suckers at ground level, and consider training them up the trellis for replacing trunks. Trunk injury is the 'unknown' factor, but typically with cold weather events one sees additional trunk injury and crown gall expression.

REMEMBER: You can always trim off more after bud burst, but you can't glue them back on.

Schumer Calls for USDA Relief for Farmers Hammered by Severe Winter

Source: Reprinted with permission, online article available at http://www.midhudsonnews.com/News/2014/February/19/crop_damage_Schumer-19Feb14.html, copyright © 2014 Mid-Hudson News Network

MILLBROOK – US Senator Charles Schumer called for quick work from the USDA to get relief for farmers in the Hudson Valley whose crops were damaged by the extreme weather this winter.

From inside the Dutchess County office of Cornell Cooperative Extension in Millbrook on Tuesday, Schumer described the type of assistance available to local farmers.

The Tree Assistance Program (TAP) will reimburse growers for damaged trees or grapevines, hops vines, and alfalfa crowns.

“If the tree’s trunk is irreparably damaged, or it applies to a vine for a vineyard, the federal government will pay 65 percent of the replacement costs to plant a new tree or plant a new vine,” Schumer said.

The second program Schumer intends to expedite is a disaster declaration for the area so that low cost federal loans will be available to farmer and growers.

Michael Migliore, president of Hudson Valley Wine and Grape Association, explained that the below freezing temperatures have damaged the grape buds. The programs Schumer is advocating will be helpful now and in the future.

“Near term it would help in the fall with emergency loans if you have to go out and buy grapes,” Migliore said. “The second thing is these negative temperatures are going to kill the grapevines. That TAP program will provide, as the senator said, up to 65 percent re-imbursement for the grower to plant new vines.”

The TAP program was recently passed as part of the farm bill. Schumer stressed that growers shouldn’t feel that he is doing them a favor by answering the phone and helping them out- that’s his job.

“I am here to make sure that every federal program that is available comes quickly, without bureaucracy, without delay,” Schumer said.

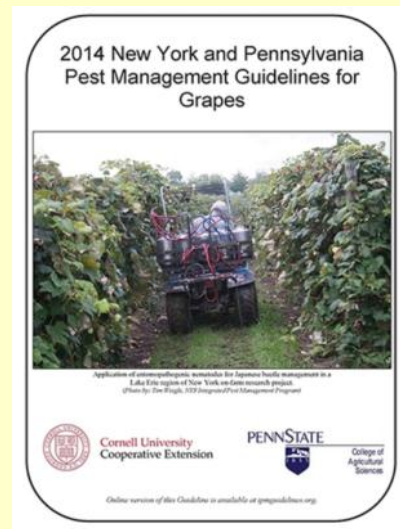
The lawmaker urged the USDA to consider a disaster declaration so emergency loans could be available for farmers that sustained severe deep freeze damage.

Cornell Pest Management Guidelines

Please note that the 2014 Cornell Pest Management Guidelines for Commercial Grapes Production is available only as a hard copy this year. A visit to the PMEP website (<http://ipmguidelines.org/Grapes/>) gives the following explanation:

“Due to budgetary constraints, the 2014 New York and Pennsylvania Pest Management Guidelines for Grapes will not be available online. We are currently exploring options that will allow us to recover the costs of posting this publication online. We hope to have the Guidelines back online in 2015.”

Distribution has been taken over by the Cornell Store. Guidelines can be purchased with enrollment in the ENYCHP – one free copy of a pest management guidelines comes with enrollment (contact Marcie at 518-272-4210) – or through the Cornell Store, online at <http://store.cornell.edu/c-875-guidelines.aspx>.



Injury Reporting

Parts of Western New York have received federal disaster declarations related to damage caused by this past winter. Growers in the Eastern New York Region are encouraged to report losses to their local FSA (Farm Service Agency) office. Below is a list of some of the local FSA offices. For a complete listing of all offices, visit <http://offices.sc.egov.usda.gov/locator/app?state=ny&agency=fsa> or contact the state office in



Orange County FSA
225 Dolson Ave.
Middletown, NY 10940-6539
(845) 343-1872
(855) 526-4795 Fax

Washington County FSA
2530 State Route 40
Greenwich, NY 12834-9627
(518) 692-9940
(855) 526-4787 Fax

Rensselaer County FSA
61 State St.
Troy, NY 12180-3412
(518) 271-1889
(855) 862-0833 Fax

Dutchess County FSA
2715 Route 44
Millbrook, NY 12545-5566
(845) 677-3952
(855) 577-2738 Fax

Schoharie County FSA
108 Holiday Way
Schoharie, NY 12157
(518) 295-8600
(855) 862-0831 Fax

NYS FSA Office
441 S. Salina St, Ste 536
Syracuse, NY 13202
315-477-6300
315-477-6323 Fax



Winter Bud Injury in the Finger Lakes and Lake Erie Regions

By Hans Walter-Peterson, Luke Haggerty, Mike Collizi, and Tim Martinson, Finger Lakes, Lake Erie, and Statewide Viticulture Extension Programs, Cornell University

sampled). Overall average across varieties (see tables) was **66%**. In the Lake Erie and Niagara co. region, the range was 61% (Riesling) to 93% (Merlot, only 1 vineyard sampled). *continued on page 6*

Several sub-zero winter cold events have led to varying levels of grapevine bud injury, primarily in central and Western NY. Regional extension programs have collected and dissected buds from 74 (Lake Erie) and 130 (Finger Lakes) vineyards, respectively.

Results are shown in the following tables from each region. In each block, 100 buds were dissected to determine whether the primary bud was alive or dead. For each variety we report:

1. The number of vineyards surveyed
2. The range of bud mortality (Lowest-Highest % bud injury)
3. The overall average % bud mortality.
4. Variety ‘class’ – Varieties are grouped into Native (more hardy), Hybrids (moderately hardy) and Vinifera (more tender)

Discussion:

- **Vinifera.** As expected, had the highest overall bud injury average. In the Finger Lakes by variety the average ranged from 57%-58% (Cab Franc and Pinot Gris) to 85% (Cabernet Sauvignon). Riesling averaged 70% (20 vineyards

2014 Finger Lakes Grape Bud Damage

| Variety | Samples Collected | Range of Bud Damage (%) | Average % Primary Bud Damage |
|------------------------|-------------------|-------------------------|------------------------------|
| <i>Native</i> | | | |
| Catawba | 1 | N/A | 9 |
| Concord | 12 | 1-43 | 21 |
| Niagara | 8 | 5-18 | 9 |
| <i>Hybrid</i> | | | |
| Cayuga White | 15 | 12-95 | 43 |
| Traminette | 3 | 40-62 | 48 |
| <i>Vinifera</i> | | | |
| Cabernet Franc | 16 | 15-100 | 58 |
| Cabernet Sauvignon | 4 | 71-100 | 85 |
| Chardonnay | 13 | 44-100 | 75 |
| Gewürztraminer | 12 | 14-86 | 64 |
| Grüner Veltliner | 3 | 47-99 | 81 |
| Lemberger | 5 | 19-100 | 57 |
| Merlot | 8 | 42-99 | 76 |
| Pinot Gris | 7 | 9-98 | 57 |
| Pinot Noir | 14 | 17-100 | 66 |
| Riesling | 20 | 13-94 | 70 |
| Sauvignon Blanc | 1 | N/A | 39 |

Winter Bud Injury in the Finger Lakes and Lake Erie Regions, continued from p. 5

2014 Lake Erie Region Grape Bud Damage

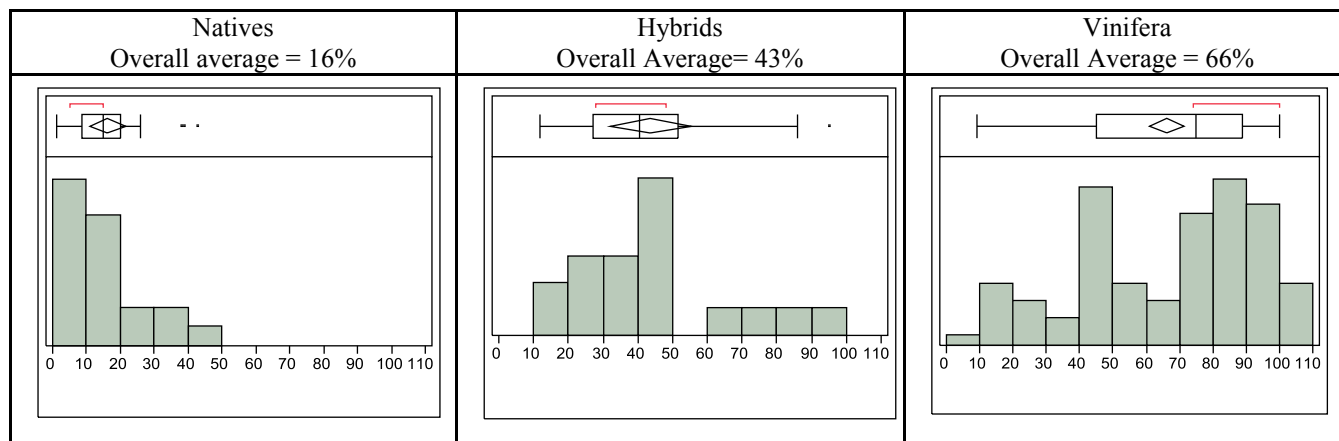
- **Hybrids.** In FL only Cayuga white and Traminette sampled, average was 43-48%. Lake Erie: wider range sampled, range 15% (Vignoles) to 60% (Chambourcin). Overall average was **43%**.
- **Natives.** In Finger Lakes, variety averages ranged from 9% (Niagara) to 21% (Concord, several blocks). In Lake Erie, range was 14% (Concord) and 26% (Niagara). Overall FL average was **16%**.
- **Variability:** There is a lot of variability, even in the *Vinifera* cultivars. The table below shows histograms with the distribution of % bud mortality in 10% increments (Finger Lakes only). Note that most of the Natives are 0-20%; Hybrids in 10-40%, and the *Vinifera* has two peaks: one at 40-50% bud injury and one at 80-90% bud injury. That means we have two distinct situations. One set of vineyards has ‘moderately severe’ injury (30-60%) and the other has ‘severe injury’ (70-100%).

| Variety | Samples Collected | Range of Bud Damage (%) | Average % Primary Bud Damage |
|--------------------|-------------------|-------------------------|------------------------------|
| Native | | | |
| Catawba | 2 | 18-44 | 34% |
| Concord | 18 | 7-37 | 14% |
| Diamond | 2 | 24-45 | 34% |
| Fredonia | 3 | 22-30 | 26% |
| Niagara | 16 | 7-49% | 26% |
| Hybrid | | | |
| Aurore | 1 | N/A | 26% |
| Chambourcin | 1 | N/A | 60% |
| Noiret | 3 | 18-62 | 44% |
| Seyval | 3 | 31-43 | 41% |
| Traminette | 4 | 29-36 | 34% |
| Vidal | 2 | 42-48 | 44% |
| Vignoles | 2 | 13-17 | 15% |
| V. vinifera | | | |
| Cabernet Franc | 4 | 62-91 | 76% |
| Cabernet Sauvignon | 4 | 67-87 | 73% |
| Gewurztraminer | 1 | N/A | 83% |
| Lemberger | 1 | N/A | 87% |
| Merlot | 1 | N/A | 97% |
| Pinot Gris | 3 | 47-72 | 67% |
| Riesling | 6 | 41-70 | 61% |

Impact:

- We consider 10% bud mortality to be ‘normal’, and that vines will compensate for anything < 20% bud injury (no adjustment needed).
- From 20-70%, we recommend leaving an equivalent amount of ‘extra buds’ to compensate.
- Above 70%, we recommend only minimal pruning, with adjustments after budburst.
- Even when growers leave extra buds, yield will probably be lowered (i.e. if I leave 60 buds instead of 30 buds when 50% of buds are injured, I may get 70 or 80% of a normal crop, but not 100%)
- With over 50% bud injury, its likely that growers will have to plan on renewing (replacing) trunks.
- We will not know how much the bud injury has affected the crop until sometime in late May to early June, after the vines have started growing. There may be trunk injury (harder to evaluate in the winter) and some injured vines may develop crown gall lesions and mid-season vine collapse if the trunk vascular tissue is injured.

Table: Distribution of % Bud injury from Native, Hybrid, and Vinifera varieties in the Finger Lakes



Rescheduled Grape Session

About 20 growers attended the rescheduled grape session at the Hudson Valley Laboratory on April 10, 2014. The program started with Steve Hoying presenting on the past six years of his grape research in the Hudson Valley. Bob Weybright, the new business development educator with Cornell Eastern NY talked about analyzing your wine and grape business. Wayne Wilcox gave an update on disease management and offered particular insight into management programs for the Hudson Valley.

There was also a grower panel, comprised of Gregory Esch (Gregory Esch Vineyard), Doug Glorie (Glorie Winery), and Gerry Barnhart (Victory View Vineyards). Discussions covered included bud damage caused by this past winter and the importance of staying on top of pesticide applications. Fruit injury from birds was also discussed, including what growers use to keep them out of the vineyard (top three: netting, bird distress calls, and scare devices). Growers also commented on the importance of timely updates related to pest management in the vineyard, and asked they be alerted by email. Full presentations will be posted on the website.



Wayne Wilcox and Steve Hoying enjoying a taste of Whitecliff wines at Whitecliff Winery.

Following the formal presentations, Mike Migliore owner of Whitecliff Vineyards, hosted a tour and sampling at his winery in Gardiner. Mike talked about his new energy efficient wine room, the importance of knowing your market and how important it is to effectively manage the space in and around your winery.

All those in attendance had to the opportunity to taste the wines made at Whitecliff.

Mike stressed the importance of making a quality wine and sourcing the grapes locally from the Hudson Valley.



Mike Migliore discussing wines at Whitecliff Winery



Wayne Wilcox presenting at the rescheduled Hudson Valley Fruit School grape session.

Thank you to all who attended the rescheduled grape session. Thank you to Mike Migliore for hosting a tour of his winery and thank you to the grower panel members for being willing to discuss emerging issues in the grape industry. - JMO

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