

Kentville Research & Development Centre (KRDC) – Nova Scotia wine grape bud hardiness 2018/2019 Report no. 14: April 29 - 30

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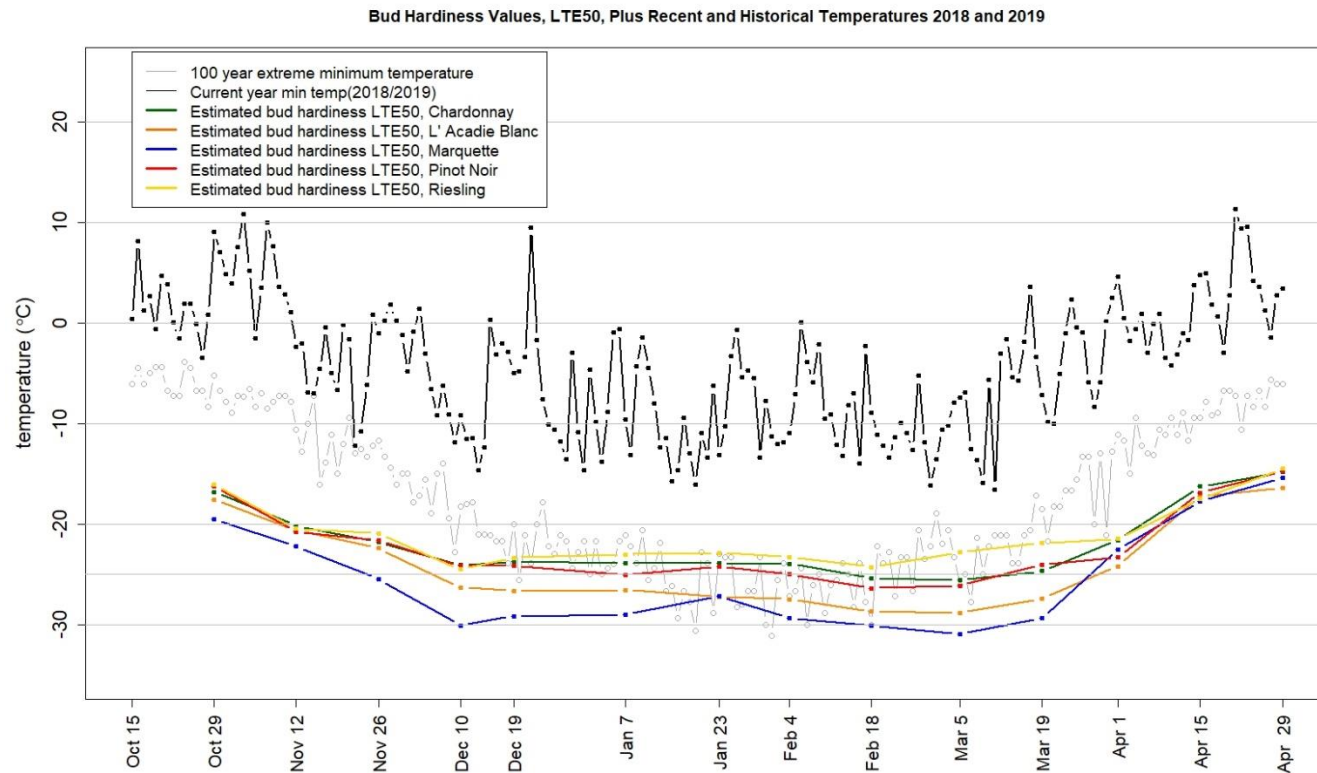


Figure 1. Plot showing the LTE50 values for the core wine grape varieties as well as recent and historical minimum temperature trends.



Current biweekly report

Large shifts have been underway in the bud acclimation values for all of the varieties in our survey. Most varieties have LTE50 values of approximately -15 °C, which is a net change of 10 to 15 degrees from their deep winter values. In spite of the changes, there remains a significant margin of safety between observed temperatures and the estimated bud hardiness. The lowest observed temperature in Kentville over the last 2 weeks was -2.9 °C on April 18th while the LTE10 values are estimated to be in the -12 °C range. On April 29th and 30th we took our last bud samples from commercial vineyards for this year. We would like to thank all of those who have delayed pruning to give us the source of buds that we need to produce the bud-hardiness estimates. Certainly none of this would have been possible without the collaboration and cooperation of the Nova Scotia Grape Growers.

Table 1. LTE10, LTE50 and LTE90 average values (°C) for core (measured biweekly) and additional (measured three times per season) wine grape cultivars and sites for the current and up to four previous reporting periods

Core cultivars and sites	March 5 – 6			March 19 – 20			April 1 – 2			April 15 – 19			April 29 – 30		
	LTE10	LTE50	LTE90	LTE10	LTE50	LTE90	LTE10	LTE50	LTE90	LTE10	LTE50	LTE90	LTE10	LTE50	LTE90
'Chardonnay' (5 sites)	-22.9	-25.6	-28.4	-21.2	-24.7	-28.1	-18.7	-21.6	-25.4	-14.0	-16.3	-20.3	-11.9	-14.8	-18.9
'L'Acadie Blanc' (6 sites)	-24.5	-28.9	-32.6	-24.1	-27.4	-31.8	-21.0	-24.2	-27.3	-14.1	-17.2	-22.6	-11.8	-16.4	-18.9
'Marquette' (3 sites)	-24.0	-31.0	-34.4	-25.8	-29.4	-32.1	-20.0	-22.5	-26.6	-11.3	-17.8	-21.9	-11.6	-15.4	-17.8
'Pinot Noir' (3 sites)	-21.6	-26.2	-27.9	-21.8	-24.0	-27.7	-20.6	-23.2	-26.0	-14.0	-16.9	-21.4	-11.9	-14.7	-19.0
'Riesling' (5 sites)	-20.4	-22.8	-26.4	-19.7	-21.9	-25.7	-19.5	-21.5	-23.5	-15.3	-17.5	-24.4	-12.6	-14.5	-17.2
Additional cultivars and sites															
'Baco Noir' (2 sites)										-14.6	-20.0	-21.8			
'Chenin Blanc' (1 site)										-14.6	-18.2	-22.0			
'Geisenheim' (2 sites)										-19.2	-22.4	-24.5			
'Leon Millot' (3 sites)										-16.6	-20.6	-22.6			
'Lucie Kuhlman' (2 sites)										-15.7	-18.2	-21.1			
'New York Muscat' (2 sites)										-19.3	-21.4	-23.8			
'Pinot Gris' (1 site)															
'Sauvignon Blanc' (3 sites)										-19.2	-20.8	-21.7			
'Seyval Blanc' (2 sites)										-15.9	-19.5	-21.4			
'Vidal Blanc' (3 sites)										-15.5	-18.8	-22.0			
'Ortega' (1 site)										-15.1	-19.3	-24.4			



Research report description

The Nova Scotia wine grape bud hardiness survey generates a biweekly report of the low temperature exotherm (LTE) values over the dormant period (roughly from late October to late April). The LTE is the temperature (°C) at which a bud freezes and is killed: LTE10, LTE50 and LTE90 values denote the temperatures at which 10%, 50% and 90% of the viable buds freeze. The LTE values for a given variety and site are generated using five canes obtained from five vines; the compound buds from nodes 3 through 7 from each cane are measured via differential thermal analysis (DTA). It is important to note that the LTE value denotes a bud's susceptibility to acute, cold temperature damage; it does *not* necessarily reflect the bud's susceptibility to dehydration, poor vine health and other more chronic forms of stress that can result in bud mortality at temperatures above the LTE values.

Each report includes: (1) a plot showing the median LTE50 values for a basket of hybrid and vinifera wine grape cultivars averaged over several sites located in Kings, Annapolis, Digby and Lunenburg counties as well as recent and historical minimum temperature trends (Figure 1); (2) comments on the current reporting period; (3) a table of LTE10, LTE50 and LTE90 values for the same cultivars shown in Figure 1 plus the LTE values for additional cultivars monitored with less frequency throughout the dormant period (Table 1). This report is produced by the KRDC Plant Physiology Program. Funding for this work is through an AgriScience Program Cluster project (J-001930, "ASC-12 Grape Wine Cluster Activity 7 - Grapevine evaluation and cold hardiness program to ensure superior plant material for the Canadian Grapevine Certification Network and to improve the sustainability of the Canadian Grape and Wine Industry"). If you have any questions or comments, please feel free to reach out to the KRDC Plant Physiology Program using the contact information listed above. This report, and others, can be found on the Canadian Grape Certification Network (CGCN) webpage: <https://www.cgcn-rccv.ca/site/home>.

Her Majesty the Queen in Right of Canada, represented by the Minister of Agriculture and Agri-Food (2019).