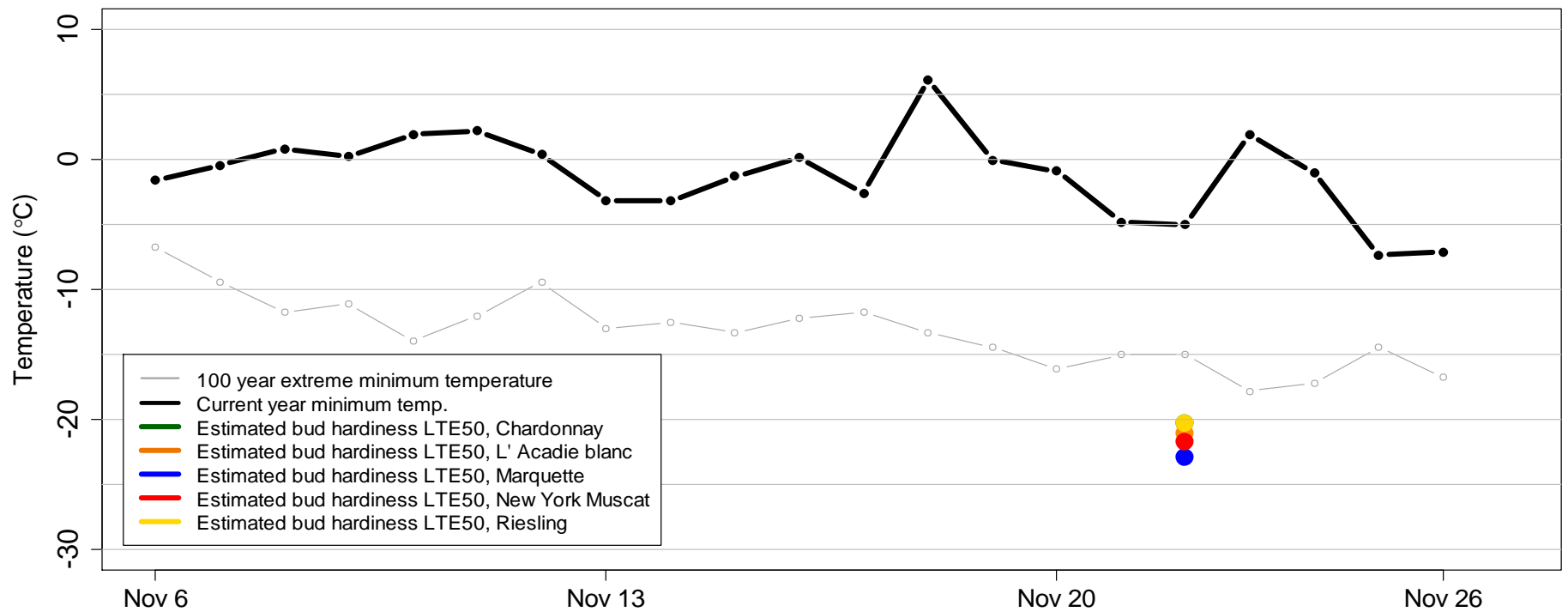




**Kentville Research & Development Centre (KRDC) – Nova Scotia wine grape bud hardiness**  
**2023/2024 Report no. 1: November 22 and 23**

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**Figure 1.** Plot showing the LTE50 values (coloured lines) for five wine grape varieties taken from Nova Scotia vineyards, as well as recent and historical temperature trends. Current observed minimum temperatures (black line) as well as the 100-year minimum temperatures (grey line) were recorded at the Kentville Research and Development Centre.



**Current biweekly report**

Our first survey for the 2023/24 season shows LTE50 values clustered together and slightly higher than the average values observed on the same date over the previous five years (2017 to 2022). Historic LTE50 values for this date are Chardonnay -20.8 °C, L'Acadie Blanc -21.8 °C, Marquette -23.8 °C, and Riesling -20.6 °C. This difference is small and should disappear as we head into the winter months. In spite of this difference, there is currently a wide margin of safety between forecasted temperatures and bud hardiness values. Long-term forecasts predict that the daily minimum temperatures will be average or slightly above for the next two weeks.

Our survey has changed slightly from previous years as we no longer include Pinot Noir and have replaced it with the more abundant New York Muscat. Previous years of the survey showed that Pinot Noir had similar bud hardiness to Chardonnay and Riesling, and we consider those varieties to be a good estimate for Pinot Noir.

**Table 1.** LTE10, LTE50 and LTE90 average values (°C) for core wine grape cultivars, for current and previous reporting periods

Coré cultivars and sites	Nov. 22 - 23											
	LTE10	LTE50	LTE90									
Chardonnay (4 sites)	-17.4	-20.3	-22.0									
L'Acadie Blanc (5 sites)	-19.0	-21.1	-22.6									
Marquette (5 sites)	-19.4	-22.9	-24.6									
New York Muscat (4 sites)	-19.2	-21.8	-23.3									
Riesling (5 sites)	-16.5	-20.3	-22.1									



### Research report description

The Nova Scotia wine grape bud hardiness survey generates reports detailing the low temperature exotherm (LTE) values over the dormant period (roughly from November to 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 group of hybrid and vinifera wine grape cultivars averaged over several sites located in Kings county 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 (Table 1). This report is produced by the KRDC Plant Physiology Program. 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.

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