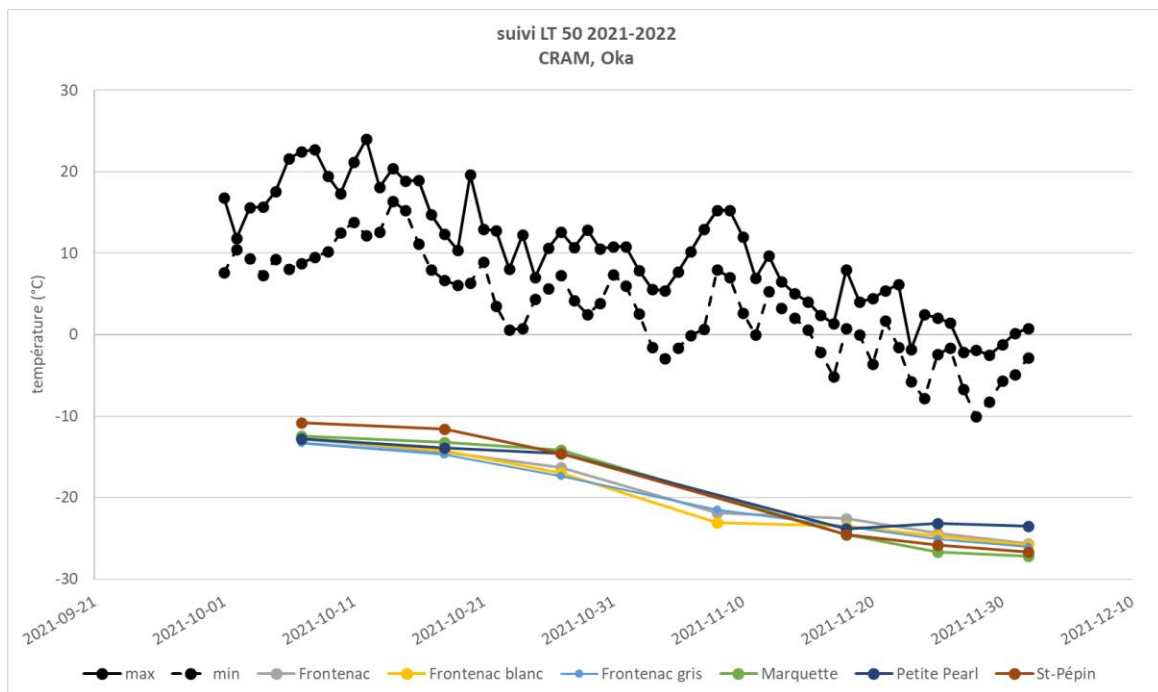


Bud hardiness monitoring for the winter 2021-2022
Bulletin 3. Slow acclimation

By Andréanne Hébert-Haché, Ph.D. candidate, Alexander Campbell, M.Sc. agr. and Caroline Provost, Ph.D

Temperatures keep dropping and fell below $-10\text{ }^{\circ}\text{C}$ on November 28 for most sites sampled. These cold events did not cause any damage because the vines were sufficiently acclimated. We assessed the survival rate of primary buds of Marquette for several sites during the week of November 29 and confirmed that the survival rate was above 95% for well lignified canes. These results were expected, as the LT50, or lethal temperatures for 50% of the buds, are below $-22\text{ }^{\circ}\text{C}$ for all cultivars at all sites. We believe that the hardiness of the grape cultivars sampled before November 28, like for the Memphrémagog and Vaudreuil-Soulanges sites, has probably improved since then, with the lower temperatures. We also note that Petite pearl is the least acclimated cultivar on all sites where it is planted. At our Oka experimental vineyard, Petite pearl has not gained hardiness since November 18, unlike the other cultivars. Temperatures between $-15\text{ }^{\circ}\text{C}$ and $-20\text{ }^{\circ}\text{C}$ are expected for the weekend of December 4 and 5, 2021 in many regions of Quebec. Because the LT10, the lethal temperature for the most sensitive 10% of buds, is below $-20\text{ }^{\circ}\text{C}$, we expect this cold spell to deepen the acclimation and not cause any damage. The impact of this cold spell will be discussed in the next bulletin where we will provide the survival rate of the most sensitive cultivars.



région	MRC	cépage	LTE 10	LTE 50	LTE 90	LTE 10	LTE 50	LTE 90	LTE 10	LTE 50	LTE 90	LTE 10	LTE 50	LTE 90
			2021-11-10						2021-11-23					
Estrie	Memphrémagog	Frontenac	-21.06	-23.11	-24.75							-22.41	-25	-27.06
		Frontenac blanc	-21.21	-22.75	-23.81								-22.66	-24.6
			2021-11-02			2021-11-16			2021-11-30					
Lanaudière	Joliette	Frontenac	-18.77	-21.86	-23.71	-21.13	-22.85	-24.73						
		Marquette	-17.58	-20.66	-22.45	-22.73	-25.09	-26.25	-26.61	-28.58	-30.02			
			2021-11-02			2021-11-16			2021-11-30					
Lanaudière	D'Autray	Frontenac	-19.86	-21.02	-23.21	-18.8	-22.82	-24.39	-24.43	-28.11	-29.09			
		Frontenac blanc	-17.84	-20.9	-23.34	-21.84	-23.38	-24.69	-25.66	-28.11	-29.17			
		Frontenac gris	-17.11	-18.2	-22.65	-22.38	-24.02	-25.11	-25.6	-27.57	-28.79			
		Marquette	-20.55	-23.01	-25.64	-22.04	-24.52	-25.57	-25.86	-28.34	-29.72			
		Petite Pearl	-16.33	-18.65	-20.11	-20.36	-21.66	-23.25	-21.51	-25.34	-27.99			
			2021-11-08			2021-11-18			2021-11-25			2021-12-02		
Laurentides	Deux-Montagnes	Frontenac	-19.2	-21.84	-23.24	-21.22	-22.6	-24.04	-23.13	-24.38	-26.08	-24.01	-25.63	-27.11
		Frontenac blanc	-22.03	-23.07	-24.2	-22.04	-23.48	-24.45	-22.34	-24.7	-26.12	-24.22	-25.85	-27.06
		Frontenac gris	-19.44	-21.48	-23.38	-16.64	-23.53	-24.59	-23.71	-25.08	-26.49	-23.26	-26.03	-27.89
		Marquette				-23.16	-24.53	-26.05	-23.55	-26.66	-28.61	-25.86	-27.24	-28.66
		Petite Pearl				-20.45	-23.84	-25.1	-19.06	-23.16	-25.46	-22.18	-23.53	-25.69
St-Pépin				-22.61	-24.54	-25.64	-23.71	-25.84	-27.57	-24.04	-26.71	-27.71		
			2021-11-08						2021-11-24					
Laurentides	Deux-Montagnes (Site 2)	Frontenac	-21.69	-23.06	-24.56				-24.18	-26.37	-27.46			
		Marquette	-22.38	-24.36	-25.87									
		St-Pépin	-23.13	-25.12	-26.93				-27.08	-27.92	-29.28			
			2021-11-10						2021-11-23					
Montérégie	Brome-Missisquoi	Frontenac	-22.71	-24.73	-26				-24.82	-26.56	-27.61			
		Frontenac blanc	-20.87	-23.86	-24.98				-26.3	-28.07	-29.41			
		Frontenac gris	-22.99	-24.1	-25.2				-24.86	-26.44	-27.65			
		Petite Pearl	-18.09	-21.42	-24.47				-22.26	-23.95	-25.74			
			2021-11-01			2021-11-17			2021-12-01					
Montérégie	Les Jardins-de-Napierville	Frontenac	-18.37	-20.62	-23.66	-21.92	-26.01	-27.33	-24.13	-27.25	-29.24			
		Frontenac blanc	-18.98	-20.89	-23.98	-23.62	-25.33	-26.7	-25.07	-27.53	-28.68			
		Marquette	-17.92	-21.23	-23.9	-23.99	-25.44	-27.09	-25.68	-27.89	-29.34			
		Petite Pearl	-17.45	-19.4	-21.48	-23.28	-24.53	-26.37	-22.05	-24.6	-26.11			
région	MRC	cépage	LTE 10	LTE 50	LTE 90	LTE 10	LTE 50	LTE 90	LTE 10	LTE 50	LTE 90	LTE 130	LTE 170	LTE 210
			2021-11-01			2021-11-17			2021-12-01					
Montérégie	Le Haut-Richelieu	Marquette	-16.17	-18.39	-20.46	-21.25	-23.5	-24.79	-24.86	-26.66	-28.12			
		St-Pépin	-17.77	-20.46	-22.65	-22.8	-24.47	-26.58	-26.08	-27.42	-29.02			
			2021-11-01			2021-11-17			2021-12-01					
Montérégie	Le Haut-St-Laurent (site 2)	Frontenac	-16.14	-18.08	-20.99	-22.17	-23.42	-25.43	-22.52	-25.24	-26.9			
		Frontenac blanc	-16.28	-17.08	-19.07	-21.41	-23.53	-25.18	-22.72	-24.95	-26.64			
		Marquette	-15.99	-17.51	-18.84	-22.57	-23.68	-24.89	-24.32	-26.93	-28.02			
		Petite Pearl	-14.34	-16.08	-17.32	-22.29	-24.82	-26.5	-25.99	-28.53	-29.82			
		St-Pépin	-15.54	-16.41	-18.21	-20.57	-21.87	-23.3	-22.41	-23.95	-26.53			
			2021-11-11						2021-11-24					
Montérégie	Marguerite d'Youville	Frontenac	-20.95	-22.73	-24.59				-24.24	-26.28	-27.42			
		Frontenac gris							-23.46	-25.01	-26.71			
		Marquette	-21.87	-24.12	-26.22				-25.34	-27.37	-29.17			
		St-Pépin	-18.92	-24.06	-25.45				-26	-27.39	-28.66			
			2021-11-10						2021-11-23					
Montérégie	Rouville	Frontenac	-20.85	-22.16	-22.89				-22.02	-23.98	-25.95			
		Frontenac blanc	-19.05	-21.34	-23.04				-23.99	-25.17	-26.76			
		Frontenac gris	-21.05	-22.44	-23.88				-23.01	-24.34	-26.69			
		Marquette	-21.23	-22.84	-24.24				-23.08	-24.87	-26.87			
			2021-11-02			2021-11-18			2021-11-25					
Montérégie	Vaudreuil-Soulanges	Frontenac	-17.14	-19.48	-20.35	-21.86	-23.81	-25.93	-22.92	-25.09	-26.59			
		Frontenac blanc	-17.39	-18.16	-20.38	-21.32	-23.69	-25.76	-21.4	-24.89	-26.87			
		Frontenac gris				-21.15	-23.85	-25.37	-21.29	-24.26	-26.1			
		Marquette	-18.33	-20.36	-22.25	-22.94	-24.61	-26.06	-26.72	-27.97	-29.27			
		Petite Pearl	-17.01	-17.62	-19.72	-19.22	-21.97	-24.27	-18.51	-22.66	-23.79			
St-Pépin	-15.59	-17.22	-18.81	-24.66	-26.34	-27.75	-25.94	-26.81	-28.77					

Note : LTE 10, LTE 50, and LTE 90 represent the lethal temperatures for 10%, 50%, and 90% of the buds, respectively.

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