

Grapevine Bud Hardiness in the Okanagan Valley, BC, 2020-2021. Carl Bogdanoff, Agriculture and Agri-Food Canada, Summerland, BC.

Variety	Location	sample day	Avg LTE50 (Oct 28,29)	Avg LTE50 (Nov 10,12)	Avg LTE50 (Nov 25,26)	Avg LTE50 (Dec 9,10)	Avg LTE50 (Dec 22,23)	Avg LTE50 (Jan 6,7)	Avg LTE50 (Jan 20,21)	Avg LTE50 (Feb 3,4)	Avg LTE50 (Feb 17,18)	Avg LTE50 (Mar 3,4)	Avg LTE50 (Mar 17,18)	Avg LTE50 (Mar31,Ap1)	Avg LTE50 (Apr 14,15)
Cabernet Franc	Black Sage	Wed	-15.8	-19.9	-21.4	-22.3	-22.5	-23.1	-23.0	-23.7	-24.1				
Cabernet Franc	Osoyoos west	Thur	-17.0	-21.4	-22.7	-23.8	-24.9	-24.6	-24.1	-23.5	-24.8				
Cabernet Franc	Oliver east	Wed	-16.6	-20.5	-22.3	-23.6	-23.5	-24.0	-23.5	-24.1	-24.6				
Cabernet Franc	Naramata Bench	Wed	-13.9	-19.4	-20.2	-21.6	-22.0	-21.9	-22.2	-22.4	-22.7				
Cabernet Franc	Black Sage	Thur	-14.5	-19.2	-21.3	-22.0	-22.8	-22.3	-23.0	-22.3	-23.3				
Cabernet Franc	Osoyoos southeast	Thur	-15.6	-19.9	-21.3	-23.4	-23.8	-23.7	-23.8	-23.4	-24.0				
Cabernet Franc (2yr)	Oliver east	Wed	-16.1	-18.7	-20.0	-20.7	-21.8	-22.0	-22.8	-22.3	-23.4				
Cabernet Franc (3yr)	Oliver east	Wed	-16.7	-19.0	-20.5	-22.5	-22.9	-23.1	-23.0	-23.6	-23.6				
Cabernet Sauv	Osoyoos northeast	Wed	-15.9	-18.9	-20.7	-21.9	-22.6	-22.8	-22.4	-22.9	-22.9				
Cabernet Sauv	Osoyoos northeast	Wed	-14.8	-17.3	-19.8	-20.6	-21.6	-21.4	-22.3	-22.3	-22.9				
Cabernet Sauv (2yr)	Black Sage	Thur	-14.3	-18.1	-20.9	-22.0	-22.1	-22.3	-22.3	-22.5	-23.3				
Cabernet Sauv	Osoyoos southeast	Thur	-14.3	-18.9	-19.8	-21.4	-20.8	-22.6	-21.8	-21.8	-21.7				
Cabernet Sauv	Black Sage	Wed	-14.8	-18.8	-19.9	-20.9	-21.4	-21.8	-22.2	-22.4	-23.2				
Chardonnay	OK Falls east	Wed	-18.1	-21.6	-22.1	-23.2	-22.9	-23.2	-23.0	-22.8	-24.0				
Chardonnay	Oliver east	Wed	-18.3	-19.9	-21.6	-22.4	-22.1	-23.2	-23.0	-22.4	-23.2				
Chardonnay	Naramata Bench	Wed	-17.7	-20.5	-21.0	-22.0	-22.3	-22.6	-22.1	-22.4	-22.8				
Chardonnay	Osoyoos southeast	Thur	-18.3	-20.2	-22.6	-23.3	-23.4	-22.9	-23.4	-22.8	-23.7				
Chardonnay	Black Sage	Wed	-17.0	-20.0	-22.2	-22.9	-22.8	-23.2	-23.3	-22.7	-24.1				
Chardonnay	Oliver south	Thur	-17.4	-21.1	-22.2	-22.9	-22.9	-23.0	-22.7	-22.7	-23.1				
Gamay noir	OK Falls west	Wed	-17.7	-19.6	-22.0	-23.2	-22.5	-23.8	-23.3	-23.4	-23.5				
Gewurztraminer	Oliver east	Wed	-16.6	-19.4	-20.6	-21.8	-21.2	-22.1	-22.7	-22.6	-23.1				
Gewurztraminer	Kelowna	Wed		-19.4	-20.4	-21.2	-21.6	-22.2	-22.0	-22.2	-22.4				
Grenache (1yr)	Osoyoos northeast	Thur	-13.6	-17.0	-19.0	-19.3	-20.4	-19.6	-20.4	-18.5	-21.0				
Malbec	Osoyoos southeast	Wed	-15.3	-18.2	-20.5	-21.4	-21.8	-22.0	-22.2	-22.0	-22.7				
Malbec	Osoyoos west	Thur	-15.9	-19.2	-20.3	-20.8	-21.5	-21.8	-22.1	-21.2	-22.8				
Malbec	Osoyoos southeast	Thur	-15.1	-19.6	-20.7	-21.4	-21.8	-22.6	-22.6	-21.7	-22.4				
Merlot	Osoyoos northeast	Thur	-15.8	-18.7	-19.9	-20.9	-20.7	-22.0	-22.2	-21.7	-22.1				
Merlot	Osoyoos northeast	Thur	-16.0	-19.6	-19.9	-21.7	-22.4	-21.4	-21.8	-22.0	-21.4				
Merlot	Black Sage	Thur	-16.7	-20.3	-21.9	-23.1		-22.8	-23.0	-23.2	-23.5				
Merlot	Osoyoos northeast	Thur	-16.8	-20.5	-21.5	-22.8	-23.8	-23.1	-22.6	-22.5	-23.2				
Merlot	Osoyoos northeast	Thur	-15.0	-18.6	-20.6	-22.1	-22.4	-22.1	-22.3	-22.1	-22.8				
Merlot	Oliver east	Thur	-17.2	-20.2	-21.3	-22.3	-22.8	-21.1	-22.9	-21.5	-23.0				
Merlot	Naramata Bench	Wed	-15.0	-18.8	-18.8	-20.6	-20.6	-21.3	-19.9	-22.2	-21.1				
Merlot	Oliver west	Thur	-13.6	-19.1	-19.2	-20.7	-21.9	-21.8	-21.3						
Merlot	Osoyoos west	Thur	-15.1	-20.3	-20.3	-22.0	-22.7	-22.7	-22.1	-21.2	-23.3				
Merlot	Osoyoos southeast	Thur	-15.2	-19.4	-20.3	-22.0	-21.9	-22.1	-21.5	-21.2	-22.2				
Merlot	Black Sage	Thur	-16.1	-19.8	-21.6	-21.7	-23.4	-23.8	-22.9	-23.1	-23.8				
Merlot	Black Sage	Thur	-17.7	-20.5	-22.3	-22.1	-23.4	-23.2	-23.9	-23.3	-24.3				
Merlot	Osoyoos southeast	Thur	-14.9	-20.4	-21.7	-22.9	-22.9	-23.0	-22.9	-23.1	-23.0				
Mourvedre (1yr)	Osoyoos northeast	Thur	-12.9	-16.5	-17.0	-17.4	-20.0	-19.8	-20.6	-19.7	-20.7				
Pinot blanc	Oliver east	Wed	-16.5	-20.5	-20.8	-22.6	-23.1	-23.2	-23.7	-22.7	-24.5				
Pinot blanc	Black Sage	Wed	-18.1	-23.2	-23.9	-23.4	-24.2	-23.8	-24.2	-25.0	-23.8				
Pinot gris	Oliver east	Wed	-18.8	-21.2	-22.7	-23.6	-23.2	-23.4	-23.7	-23.9	-24.2				
Pinot gris	OK Falls east	Wed	-19.4	-21.8	-22.5	-24.1	-23.6	-24.1	-23.1	-22.8	-24.5				
Pinot gris	Naramata Bench	Wed	-15.8	-18.8	-21.9	-22.0	-22.9	-23.3	-22.4	-23.1	-23.8				
Pinot gris	Black Sage	Wed	-16.6	-19.6	-20.6	-22.4	-22.6	-23.0	-23.2	-22.5	-23.5				
Pinot gris	Oliver east	Thur	-16.9	-21.8	-22.6	-23.0	-24.1	-23.6	-23.8	-23.4	-24.7				
Pinot noir	Osoyoos northeast	Thur	-17.7	-20.8	-22.0	-23.8	-23.7	-23.6	-23.8	-23.4	-24.2				
Pinot noir	OK Falls east	Wed	-18.2	-21.9	-22.9	-23.9	-23.7	-24.2	-24.7	-24.3	-25.2				
Pinot noir	Naramata Bench	Wed	-18.5	-22.7	-23.3	-23.7	-24.4	-24.5	-24.7	-24.7	-24.7				
Pinot noir	Black Sage	Thur	-18.1	-21.6	-23.0	-23.7	-24.3	-23.0	-24.5	-24.2	-25.0				
Pinot noir	Kelowna	Wed		-20.9	-21.8	-23.0	-23.1	-23.8	-23.6	-24.2	-24.4				
Riesling	Oliver east	Wed	-18.3	-19.5	-20.9	-22.4	-22.8	-22.5	-23.2	-22.4	-23.0				
Riesling	Naramata Bench	Wed	-17.2	-20.2	-22.6	-22.4	-23.5	-23.0	-23.6	-24.0	-24.7				
Riesling	Black Sage	Wed	-16.4	-20.1	-21.7	-23.2	-22.0	-23.3	-22.9	-23.0	-23.3				
Riesling	West Kelowna	Wed		-20.2	-21.6	-22.4	-23.2	-22.8	-22.8	-23.8	-23.8				
Riesling	Black Sage	Wed	-17.8	-21.6	-23.0	-23.2	-23.4	-23.1	-23.8	-24.4	-24.5				
Sauvignon blanc	Oliver east	Thur	-17.2	-20.5	-21.0	-22.1	-22.9	-22.4	-22.7	-22.1	-23.4				
Sauvignon blanc	Black Sage	Thur	-16.3	-19.8	-22.6	-22.2	-23.7	-23.9	-24.2	-23.7	-24.5				
Sauvignon blanc	Black Sage	Wed	-15.4	-19.6	-21.5	-21.5	-22.4	-22.7	-22.3	-22.6	-23.5				
Sauvignon blanc	Oliver east	Wed	-15.2	-19.1	-20.7	-20.7	-21.8	-22.3	-22.2	-22.3	-23.0				
Shiraz	Osoyoos northeast	Wed	-14.4	-17.1	-19.7	-20.3	-20.8	-21.1	-21.9	-22.1	-23.2				
Shiraz	Osoyoos northeast	Thur	-14.0	-16.5	-19.7	-20.4	-21.9	-21.2	-22.3	-21.5	-22.4				
Shiraz	Osoyoos southeast	Thur	-15.5	-19.5	-21.1	-21.7	-22.9	-22.4	-22.6	-22.5	-23.5				
Shiraz	Black Sage	Wed	-15.3	-20.0	-21.0	-22.6	-23.0	-23.0	-23.6	-23.4	-24.2				
Shiraz cl.174	Osoyoos southeast	Thur	-12.3	-17.3	-18.7	-21.2	-21.6	-22.0	-21.5	-20.9	-22.7				
Tempranillo	Oliver south	Thur	-14.6	-17.5	-19.3	-21.1	-19.8	-20.6	-20.6	-20.0	pruned				
Viognier	Osoyoos southeast	Wed	-14.7	-18.8	-19.9	-22.2	-22.5	-21.9	-22.8	-22.0	-23.7				
Viognier	Osoyoos west	Thur	-16.1	-21.2	-22.8	-23.3	-24.8	-24.2	-24.0	-24.1	-25.1				
Viognier	Osoyoos southeast	Thur	-14.8	-19.8	-20.9	-21.6	-23.5	-22.5	-22.8	-22.9	-24.0				
Zinfandel	Osoyoos northeast	Thur	-14.8	-18.5	-20.0	-20.0	-22.5	-21.9	-21.9	-23.0	-22.2				
Zinfandel (2yr)	Black Sage	Thur	-14.4	-17.1	-18.7	-20.0	-20.5	-20.4	-20.8	-20.4	-21.9				

LTE: Lethal temperature exotherm (°C). AVG LTE50: Average lethal temperature exotherm at 50% bud mortality for buds collected from 3 vines at selected sites in the Okanagan Valley.