

## 2018 - 2019 Winter Grape Bud Hardiness Okanagan Valley BC

Variety	Location	sample day	Avg LTE/vine (Nov 6,7)	Avg LTE/vine (Nov 20,21)	Avg LTE/vine (Dec 4,5)	Avg LTE/vine (Dec 18,19)	Avg LTE/vine (Jan 2,3)	Avg LTE/vine (Jan 15,16)	Avg LTE/vine (Jan 29,30)	Avg LTE/vine (Feb 12,13)	Avg LTE/vine (Feb 26,27)	Avg LTE/vine (Mar 12,13)	Avg LTE/vine (Mar 26,27)	Avg LTE/vine (Apr 9,10)
Cabernet Franc	Black Sage	Tues	-17.7	-23.1	-22.3	-22.2	-23.4	-23.6	-23.8	-24.3	-25.2	-24.9	-18.6	
Cabernet Franc	Osoyoos, north	Wed	-15.1	-23.3	-23.1	-23.1	-22.9	-23.6	-23.5	-24.2	-24.3	-24.3		
Cabernet Franc	Oliver east	Tues	-17.4	-22.9	-24.0	-23.8	-24.3	-23.8	-24.4	-23.8	-23.6	-24.3	-18.0	
Cabernet Franc	Naramata Bench	Tues	-15.4	-20.9	-21.1	-21.9	-21.9	-22.4	-22.2	-24.4	-22.4	-25.0	-14.7	
Cabernet Franc	Black Sage	Wed	-15.2	-22.2	-23.3	-22.5	-23.1	-23.8	-23.8	-25.1	-24.0	-23.8	-16.0	
Cabernet Franc	Osoyoos, southeast	Wed		-21.0	-24.1	-23.0	-23.6	-24.7	-24.9	-25.8	-25.1	-25.9	-20.6	
Cabernet Sauvignon	Osoyoos northeast	Tues	-16.4	-22.7	-23.5	-23.7	-23.5	-23.5	-23.9	-22.6	pruned	pruned	pruned	
Cabernet Sauvignon	Osoyoos northeast	Tues	-16.6	-21.6	-23.0	-22.4	-23.0	-23.3	-23.5	-23.7	-23.7	-22.9	-19.5	
Cabernet Sauvignon	Osoyoos, southeast	Wed	-16.5	-21.7	-23.2	-22.2	-23.8	-23.0	-23.9	-26.3	-23.8	-23.4	-17.8	
Cabernet Sauvignon	Black Sage	Tues	-16.7	-21.7	-22.1	-22.6	-23.5	-23.3	-23.2	-23.2	-24.1	-23.9	-18.6	
Chardonnay	OK Falls, east	Tues	-18.5	-23.5	-24.0	-24.0	-25.2	-23.4	-24.2	-24.7	-25.2	-24.4	-15.6	
Chardonnay	Oliver east	Tues	-17.0	-22.6	-23.3	-23.9	-24.7	-24.3	-24.6	-25.1	-24.0	-24.2	-15.6	
Chardonnay	Naramata Bench	Tues	-18.9	-23.5	-23.4	-24.0	-24.0	-23.3	-25.3	-26.2	-26.7	-25.9	-18.2	
Chardonnay	Osoyoos, southeast	Wed	-17.3	-23.2	-24.7	-24.2	-25.0	-24.7	-24.6	-25.5	-25.3	-24.7	-17.3	
Chardonnay	Black Sage	Tues	-15.9	-23.3	-23.5	-23.5	-24.6	-24.5	-25.2	-24.8	-25.9	-24.7	-18.9	
Chardonnay	Oliver, south	Wed	-17.6	-23.8	-23.8	-23.5	-24.5	-23.9	-24.7	-24.8	-24.9	-24.0	-16.2	
Gewurztraminer	OK Falls, west	Tues	-17.0	-22.5	-23.8	-23.5	-24.8	-24.6	-24.8	-24.1	-25.0	-23.5	-16.5	
Gewurztraminer	Oliver east	Tues	-18.6	-22.3	-22.5	-22.4	-23.3	-23.2	-23.0	-24.1	-24.1	-23.5	-18.3	
Gewurztraminer	Kelowna	Tues	-16.8		-21.8	-22.5	-23.0	-22.8	-23.1		-23.2	-22.9	-15.4	
Malbec	Osoyoos, southeast	Tues	-17.4	-21.3	-22.1	-22.4	-23.3	-23.2	-22.5	-23.6	-22.8	-22.3	-17.0	
Malbec	Osoyoos, north	Wed	-17.1	-22.7	-22.5	-21.1	-21.0	-22.1	-24.2	-25.4	-24.4	-23.4	-18.9	
Malbec	Osoyoos, southeast	Wed		-21.7	-21.5	-22.0	-22.6	-22.6	-23.6	-23.6	-23.6	-25.0	-19.9	
Merlot	Osoyoos northeast	Wed	-17.4	-22.0	-23.1	-22.8	-23.5	-22.9	-24.3	-24.9	-23.9	-23.6	-17.9	
Merlot	Black Sage	Tues	-18.1	-22.2	-23.3	-22.6	-23.9	-22.6	-23.0	-23.5	-23.5	-23.7	-17.5	
Merlot	Osoyoos northeast	Wed	-17.4	-22.3	-23.1	-23.1	-23.3	-22.9	-23.1	-23.3	-24.0	-23.6	-17.4	
Merlot	Osoyoos northeast	Wed	-18.0	-22.3	-23.4	-23.3	-22.8	-23.6	-24.1	-24.5	-25.1	-24.6	-17.4	
Merlot	Osoyoos northeast	Wed	-17.0	-24.5	-23.3	-23.5	-24.0	-23.8	-25.1	-23.7	-26.8	-27.2	-21.2	
Merlot	Naramata Bench	Tues	-16.5	-21.7	-21.4	-21.8	-22.8	-22.8	-22.9	-25.0	-23.1	-22.6	-15.7	
Merlot	Osoyoos northeast	Wed	-16.7	-22.0	-22.5	-23.0	-23.0	-22.2	-22.9	-23.8	-23.9	-23.5	-18.2	
Merlot	Oliver east	Wed	-17.2	-23.3	-23.1	-22.7	-22.9	-23.1	-23.3	-25.3	-24.6	-23.9	-18.5	
Merlot	Oliver, west	Wed	-16.9	-21.6	-21.9	-22.0	-22.3	-22.6	-22.5	-24.1	-22.9	-22.8	-17.5	
Merlot	Osoyoos west	Wed	-16.4	-21.1	-22.1	-22.7	-22.5	-22.4	-23.4	-24.6	-24.2	-23.3	-18.4	
Merlot	Osoyoos, southeast	Wed	-17.1	-22.4	-22.7	-22.6	-23.0	-23.2	-24.1	-24.9	-23.1	-23.9	-17.2	
Merlot	Black Sage	Wed	-15.1	-23.5	-23.0	-22.3	-22.7	-23.4	-24.7	-24.2	-25.6	-25.3	-18.6	
Merlot	Black Sage	Wed	-17.1	-21.8	-21.6	-22.8	-22.6	-22.6	-23.6	-24.4	-25.2	-24.7	-19.8	
Merlot	Osoyoos, southeast	Wed		-21.3	-22.3	-22.4	-22.7	-23.0	-22.9	-24.3	-24.0	-23.7	-17.3	
Pinot blanc	Oliver east	Tues	-20.0	-23.4	-25.4	-24.2	-25.0	-23.8	-24.9	-22.3	-25.6	-25.7	-21.1	
Pinot blanc	Black Sage	Tues	-18.6	-23.0	-23.8	-24.1	-24.1	-23.0	-23.5	-22.9	-24.4	-23.7	-17.0	
Pinot gris	OK Falls, east	Tues	-18.8	-24.0	-23.9	-24.3	-24.6	-23.9	-25.2	-24.1	-25.3	-25.0	-17.7	
Pinot gris	Oliver east	Tues	-17.6	-23.3	-23.8	-24.1	-24.5	-23.7	-24.6	-26.2	-25.6	-24.7	-17.9	
Pinot gris	Naramata Bench	Tues	-16.5	-22.6	-23.6	-23.3	-23.7	-23.1	-24.8	-23.6	-24.7	-23.8	-16.5	
Pinot gris	Black Sage	Tues	-18.1	-23.1	-24.3	-23.9	-24.9	-24.2	-24.9	-22.5	-26.2	-24.7	-18.7	
Pinot gris	Oliver east	Wed	-21.5	-24.8	-27.2	-25.5	-25.7	-25.5	-27.3	-23.9	-27.3	-26.5	-20.2	
Pinot noir	Osoyoos northeast	Wed	-19.2	-23.4	-24.7	-24.0	-24.3	-24.5	-25.1	-24.8	-24.9	-25.1	-20.3	
Pinot noir	OK Falls, east	Tues	-19.7	-22.7	-23.3	-23.0	-24.5	-23.2	-24.0	-23.2	-24.8	-24.0	-19.3	
Pinot noir	Naramata Bench	Tues	-17.7	-22.1	-23.2	-22.8	-23.1	-23.0	-23.8	-24.2	-24.3	-24.2	-19.3	
Pinot noir	Black Sage	Wed	-18.2	-23.2	-24.4	-23.9	-24.4	-24.2	-24.8	-25.3	-25.3	-25.0	-18.7	
Pinot noir	Kelowna	Tues	-17.8	-23.8	-23.2	-23.2	-24.3	-23.6	-24.2		-24.5	-23.4	-16.0	
Riesling	Oliver east	Tues	-20.0	-22.1	-22.9	-22.6	-24.3	-23.3	-25.2	-24.5	-25.2	-25.9	-21.0	
Riesling	Naramata Bench	Tues	-18.1	-24.0	-24.9	-24.2	-24.9	-25.0	-25.4	-23.6	-26.2	-25.0	-20.5	
Riesling	Black Sage	Tues	-19.6	-23.5	-24.4	-24.4	-25.3	-24.6	-27.1	-23.4	-27.0	-27.4	-21.9	
Riesling	West Kelowna	Tues	-19.1	-23.3	-23.3	-24.1	-24.8	-24.3	-25.6		-26.9	-25.8	-18.8	
Riesling	Black Sage	Tues	-18.7	-22.7	-23.9	-23.7	-24.6	-25.1	-24.1	-23.4	-24.3	-24.6	-19.5	
Sauv blanc	Oliver east	Tues	-15.7	-21.3	-22.2	-22.4	-23.2	-22.7	-23.3	-23.9	-24.9	-23.4	-20.7	
Sauv blanc	Oliver east	Tues	-18.1	-23.0	-23.8	-23.0	-24.9	-24.2	-24.2	-24.7	-25.3	-24.3	-17.9	
Sauv blanc	Osoyoos northeast	Wed	-17.1	-20.6	-22.1	-21.5	-21.7	-22.7	-22.8	-23.1	-22.0	-22.4	-15.6	
Sauv blanc	Osoyoos northeast	Wed	-18.2	-22.9	-23.7	-22.1	-23.0	-22.6	-23.2	-25.4	-23.0	-22.5	-17.9	
Sauv blanc	Osoyoos northeast	Wed	-18.0	-21.5	-22.9	-22.7	-23.6	-23.4	-23.2	-23.6	-22.2	-22.1	-16.6	
Sauv blanc	Oliver east	Wed	-17.8	-22.5	-23.0	-22.9	-23.4	-23.7	-24.3	-24.0	-24.1	-23.8	-19.4	
Sauv blanc	Oliver east	Wed	-18.0	-21.3	pulled	pulled	pulled	pulled	pulled	pulled	pulled	pulled	pulled	
Sauv blanc	Black Sage	Wed	-14.9	-22.0	-22.9	-22.1	-23.2	-23.0	-23.2	-25.3	-23.6	-23.0	-17.0	
Sauv blanc	Black Sage	Tues	-17.7	-22.8	-22.1	-22.0	-22.6	-22.7	-24.1	-24.6	-24.5	-23.9	-19.9	
Shiraz	Osoyoos northeast	Tues	-15.2	-19.9	-22.0	-21.9	-22.8	-23.2	-23.3	-23.2	-23.8	-22.6	-16.8	
Shiraz	Osoyoos northeast	Wed	-16.1	-21.0	-22.3	-22.6	-23.4	-22.8	-23.6	-24.6	-23.4	-23.7	-18.7	
Shiraz	Osoyoos, southeast	Wed	-18.1	-23.0	-23.5	-23.7	-23.3	-24.2	-25.2	-26.6	-24.6	-24.1	-18.6	
Shiraz	Black Sage	Tues	-16.7	-22.4	-23.9	-23.2	-24.1	-23.7	-24.5	-24.4	-25.4	-24.1	-18.9	
Shiraz cl.174	Osoyoos, southeast	Wed	-15.4	-21.2	-21.7	-22.5	-23.9	-23.5	-21.8	-23.3	-23.5	-22.8	-16.8	
Tempranillo	Oliver, south	Wed	-18.2	-23.2	-22.9	-22.1	-21.6	-22.1	-22.2	-22.9	-22.2	-21.7	-17.4	
Viognier	Osoyoos, southeast	Tues	-16.9	-21.6	-22.8	-22.6	-24.5	-23.1	-23.9	-22.6	-24.5	-24.7	-19.8	
Viognier	Osoyoos west	Wed	-18.7	-22.8	-25.0	-23.6	-24.1	-24.3	-25.9	-24.4	-25.5	-24.1	-18.3	
Viognier	Osoyoos, southeast	Wed	-22.3	-23.2	-23.8	-23.8	-24.4	-24.4	-25.7	-24.3	-24.6	-25.3	-20.5	
Zinfandel	Osoyoos northeast	Wed	-16.2	-20.4	-22.7	-21.6	-22.8	-23.0	-24.0	-24.6	-24.3	-23.4	-17.6	

LTE - Lethal Temperature Exotherm (°C)

Average LTE/site is the mean temperature for bud death from 3 vines at selected sites in the Okanagan Valley

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