

Grapevine Bud Hardiness in the Okanagan Valley, BC, 2013-2014. Carl Bogdanoff, Agriculture and Agri-Food Canada, Summnerland, BC.

| Location  | Variety            | Avg<br>LTE*/site<br>(Oct 25) | Avg<br>LTE/site<br>(Nov 8) | Avg<br>LTE/site<br>(Nov 22) | Avg<br>LTE/vine<br>(Dec 6) | Avg<br>LTE/site<br>(Dec 20) | Avg<br>LTE/site<br>(Jan 3) | Avg<br>LTE/vine<br>(Jan 17) | Avg<br>LTE/site<br>(Jan 31) | Avg<br>LTE/site<br>(Feb 14) | Avg<br>LTE/site<br>(Feb 28) | Avg<br>LTE/site<br>(Mar 14) | Avg<br>LTE/site<br>(Mar 27) | Avg<br>LTE/site<br>(Apr 11) |
|---|--------------------|------------------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Black Sage                                      | Cabernet Franc     | -12.9                        | -17.7                      | -22.4                       | -23.8                      | -23.9                       | -23.5                      | -22.6                       | -23.7                       | -23.0                       | -23.0                       | -17.6                       | -13.3                       | -10.3                       |
| Oliver, east                                    | Cabernet Franc     | -13.1                        | -18.2                      | -22.6                       | -24.4                      | -24.1                       | -23.4                      | -22.9                       | -23.5                       | -21.1                       | -22.8                       | -18.4                       | -17.1                       | -10.3                       |
| Osoyoos, northeast                              | Cabernet Sauvignon | -12.9                        | -17.0                      | -22.3                       | -23.9                      | -22.8                       | -22.3                      | -22.6                       | -22.7                       | -21.2                       | -23.5                       | -20.1                       | -17.4                       | -10.2                       |
| Osoyoos, northeast                              | Cabernet Sauvignon | -11.9                        | -15.8                      | -21.7                       | -23.5                      | -23.1                       | -22.7                      | -22.0                       | -22.3                       | -21.3                       | -21.8                       | -18.2                       | -15.1                       | -10.4                       |
| Osoyoos, southeast                              | Cabernet Sauvignon | -11.8                        | -17.9                      | -23.2                       | -24.1                      | -22.5                       | -23.2                      | -22.9                       | -23.5                       | -22.0                       | -22.7                       | -18.8                       | -15.4                       | -10.7                       |
| Black Sage                                      | Cabernet Sauvignon | -11.3                        | -17.5                      | -21.3                       | -24.2                      | -23.1                       | -22.5                      | -21.8                       | -23.1                       | -22.7                       | -23.5                       | -19.9                       | -18.8                       | -11.7                       |
| Osoyoos, southeast                              | Chardonnay         | -14.2                        | -20.7                      | -23.5                       | -25.3                      | -24.6                       | -24.4                      | -23.8                       | -23.7                       | -23.1                       | -23.9                       | -19.3                       | -14.8                       | -10.6                       |
| Black Sage                                      | Chardonnay         | -13.1                        | -19.1                      | -22.4                       | -24.3                      | -24.4                       | -23.0                      | -22.6                       | -23.2                       | -22.9                       | -22.6                       | -18.3                       | -15.2                       | -10.2                       |
| Naramata Bench                                  | Chardonnay         | -13.6                        | -18.9                      | -22.0                       | -22.4                      | -23.1                       | -22.9                      | -22.3                       | -23.2                       | -22.4                       | -23.3                       | -17.9                       | -14.9                       | -10.3                       |
| OK Falls, east                                  | Chardonnay         | -14.2                        | -19.4                      | -23.8                       | -24.6                      | -24.4                       | -21.9                      | -22.9                       | -24.0                       | -21.9                       | -22.5                       | -17.0                       | -14.7                       | -9.5                        |
| Oliver, east                                    | Chardonnay         | -14.4                        | -19.0                      | -22.8                       | -23.7                      | -24.0                       | -23.1                      | -23.5                       | -23.1                       | -22.7                       | -21.5                       | -15.7                       | -14.9                       | -12.0                       |
| OK Falls, west                                  | Gewurztraminer     | -13.0                        | -19.2                      | -22.0                       | -22.8                      | -22.9                       |                            |                             | -23.2                       | -22.4                       | -20.2                       | -17.6                       | -15.0                       | -10.7                       |
| Oliver, east                                    | Gewurztraminer     | -13.2                        | -19.9                      | -22.0                       | -23.2                      | -22.7                       | -22.5                      | -22.0                       | -22.7                       | -21.5                       | -22.8                       | -17.9                       | -16.2                       | -9.7                        |
| Oliver, west                                    | Merlot             | -11.1                        | -13.8                      | -19.3                       | -22.0                      | -20.8                       | -19.2                      | -21.7                       | -21.4                       | -19.9                       | -20.3                       | -18.7                       | -15.9                       | -8.7                        |
| Osoyoos, northeast                              | Merlot             | -12.6                        | -17.9                      | -21.3                       | -22.3                      | -23.1                       | -22.2                      | -22.3                       | -22.8                       | -20.9                       | -20.8                       | -19.0                       | -16.8                       | -10.1                       |
| Black Sage                                      | Merlot             | -12.5                        | -19.5                      | -22.4                       | -23.3                      | -22.3                       | -23.2                      | -22.8                       | -23.0                       | -22.6                       | -21.8                       | -19.1                       | -15.5                       | -9.1                        |
| Black Sage                                      | Pinot blanc        | -13.6                        | -19.3                      | -24.5                       | -23.0                      | -23.4                       | -22.8                      | -23.0                       | -24.3                       | -23.2                       | -22.8                       | -20.1                       | -18.5                       | -11.3                       |
| Oliver, east                                    | Pinot blanc        | -14.2                        | -20.7                      | -22.7                       | -23.1                      | -24.4                       | -22.2                      | -23.1                       | -24.1                       | -22.9                       | -22.5                       | -20.5                       | -16.3                       | -10.9                       |
| Black Sage                                      | Pinot gris         | -15.1                        | -20.0                      | -23.8                       | -24.3                      | -25.2                       | -23.8                      | -24.4                       | -22.0                       | -23.4                       | -24.3                       | -19.8                       | -17.0                       | -11.0                       |
| Oliver, east                                    | Pinot gris         | -16.0                        | -21.7                      | -25.1                       | -22.0                      | -25.3                       | -24.4                      | -24.7                       | -23.3                       | -24.4                       | -23.4                       | -21.8                       | -19.2                       | -12.4                       |
| Naramata Bench                                  | Pinot gris         | -12.2                        | -16.3                      | -21.8                       | -22.7                      | -23.9                       | -21.8                      | -22.6                       | -23.3                       | -22.1                       | -22.6                       | -19.3                       | -16.2                       | -10.2                       |
| OK Falls, east                                  | Pinot gris         | -16.4                        | -20.1                      | -24.0                       | -24.9                      | -25.3                       | -23.4                      | -23.7                       | -23.6                       | -22.9                       | -23.6                       | -19.4                       | -17.9                       | -11.0                       |
| Oliver, east                                    | Pinot gris         | -13.9                        | -19.5                      | -22.2                       | -23.6                      | -23.4                       | -22.2                      | -22.6                       | -24.4                       | -21.5                       | -22.4                       | -17.7                       | -16.8                       | -10.5                       |
| Black Sage                                      | Pinot noir         | -14.6                        | -19.3                      | -23.7                       | -25.1                      | -24.2                       | -24.1                      | -23.7                       | -24.1                       | -22.1                       | -24.0                       | -19.7                       | -17.4                       | -9.5                        |
| Kelowna   | Pinot noir         | -14.0                        | -20.0                      | -22.6                       | -23.7                      | -24.4                       | -23.1                      | -22.9                       | -23.0                       | -23.2                       | -22.9                       | -19.3                       | -16.0                       | -11.3                       |
| Osoyoos, northeast                              | Pinot noir         | -14.6                        | -20.6                      | -23.0                       | -23.2                      | -24.4                       | -23.6                      | -24.4                       | -23.3                       | -22.3                       | -20.5                       | -20.0                       | -18.0                       | -11.1                       |
| Black Sage                                      | Riesling           | -13.4                        | -21.5                      | -22.8                       | -25.1                      | -24.1                       | -24.0                      | -23.7                       | -23.8                       | -22.3                       | -24.1                       | -21.3                       | -18.8                       | -10.9                       |
| West Kelowna                                    | Riesling           | -11.8                        | -17.9                      | -20.7                       | -23.3                      | -22.2                       | -22.3                      | -21.7                       | -22.6                       | -21.9                       | -22.4                       | -18.2                       | -16.9                       | -9.2                        |
| Oliver, east                                    | Riesling           | -16.4                        | -19.8                      | -23.1                       | -22.6                      | -22.0                       | -22.4                      | -23.2                       | -23.1                       | -24.1                       | -23.5                       | -21.0                       | -18.8                       | -11.2                       |
| Black Sage                                      | Sauvignon blanc    | -12.1                        | -17.3                      | -21.4                       | -23.2                      | -21.8                       | -21.6                      | -21.5                       | -22.0                       | -20.5                       | -21.7                       | -18.9                       | -15.1                       | -9.6                        |
| Oliver, east                                    | Sauvignon blanc    | -15.2                        | -18.9                      | -22.5                       | -23.5                      | -23.1                       | -22.1                      | -22.0                       | -22.4                       | -20.8                       | -21.4                       | -18.5                       | -16.1                       | -9.3                        |
| Oliver, east                                    | Sauvignon blanc    | -12.9                        | -19.9                      | -22.9                       | -24.1                      | -23.1                       | -21.9                      | -22.9                       | -23.2                       | -21.9                       | -21.7                       | -19.2                       | -15.6                       | -10.1                       |
| Osoyoos, southeast                              | Shiraz             | -13.1                        | -17.1                      | -22.7                       | -23.8                      | -23.7                       | -23.5                      | -24.0                       | -23.3                       | -22.3                       | -23.0                       | -19.6                       | -17.9                       | -11.5                       |
| Black Sage                                      | Shiraz             | -12.5                        | -16.2                      | -20.2                       | -22.9                      | -23.2                       | -21.8                      | -21.7                       | -23.4                       | -20.2                       | -20.0                       | -20.0                       | -16.4                       | -12.9                       |
| Osoyoos, northeast                              | Shiraz             | -11.3                        | -15.2                      | -20.4                       | -21.6                      | -21.9                       | -21.1                      | -21.0                       | -22.0                       | -21.6                       | -21.3                       | -18.4                       | -14.0                       | -9.8                        |
| Osoyoos, northeast                              | Shiraz             | -12.9                        | -16.0                      | -18.8                       | -21.4                      | -21.0                       | -21.1                      | -21.8                       | -21.8                       | -18.7                       | -21.3                       | -19.0                       | -17.0                       | -9.9                        |
| <b>Bud Hardiness (all sites, all varieties)</b> |                    | <b>-13.4</b>                 | <b>-18.6</b>               | <b>-22.3</b>                | <b>-23.5</b>               | <b>-23.4</b>                | <b>-22.7</b>               | <b>-22.8</b>                | <b>-23.1</b>                | <b>-22.1</b>                | <b>-22.4</b>                | <b>-19.0</b>                | <b>-16.4</b>                | <b>-10.5</b>                |

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