



## Winter Survival of Alfalfa

By John McGregor, MFGA Extension Support

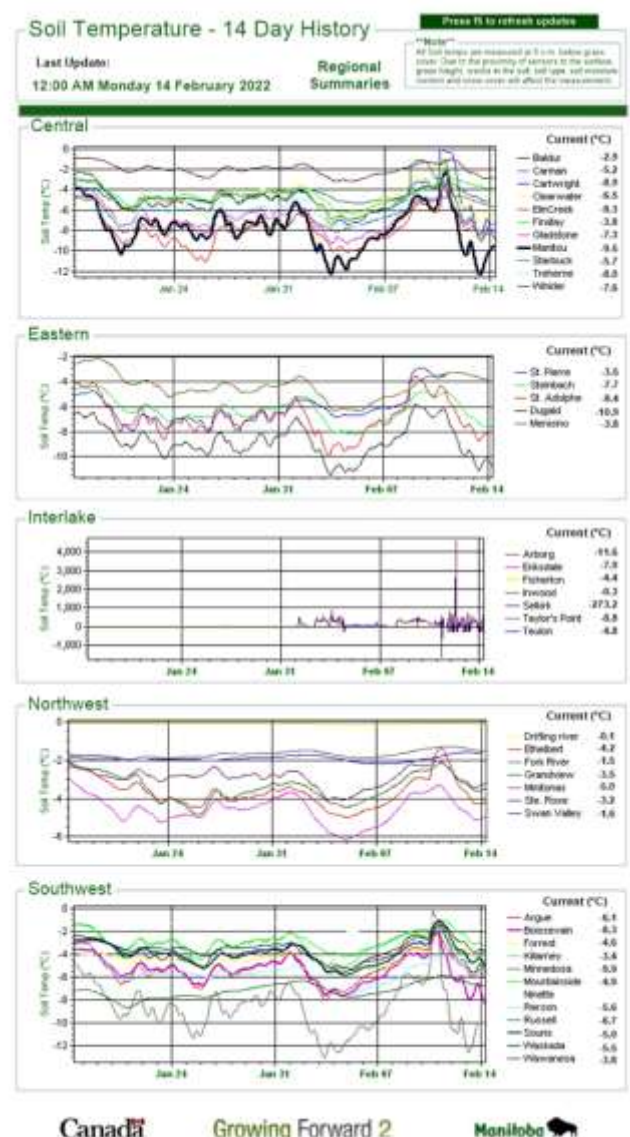
With most of Manitoba receiving normal to above normal snow this winter, concerns about soil moisture availability for the start of the growing season are beginning to lessen. The record cold temperatures however, have some producers expressing concerns about the survival of their alfalfa this winter.

The snowfall accumulations are providing a good insulation cover that so far is protecting the alfalfa crop from reaching the critical temperature of minus 12 Celsius.

As soil temperatures drop, the risk of winterkill to alfalfa greatly increases. Adding to this worry is the variability of snowfall accumulations on alfalfa fields potentially triggering the temperature of the crown to drop below the critical level. Alfalfa, once dormant, can survive in soil temperatures up to -12 degrees Celsius. Below this temperature, water left within the alfalfa taproot and crown cells freezes and forms ice crystals that puncture the cell membranes. When the alfalfa roots thaw, the plants die because water and cell contents leak from the cells.

What we are seeing at the Mb Ag weather monitoring sites are soil temperatures (as of February 14<sup>th</sup>) staying in the -8C range in most areas. Most of the monitoring sites are located on grass and therefore they simulate forage fields.

As for predicting winter-kill damage at this time of year, that's very difficult. If the plant went into winter not fully dormant, or if the variety is less winter hardy, it can be injured or killed at temperatures above -12C and conversely if it is more winter hardy or fully dormant it may be able to withstand temperatures below -12C for short periods of time.



For this year with the moisture that Manitoba received in the late fall and the re-growth that we saw late in the season for alfalfa fields, there is the potential that some fields may not have gone completely dormant before winter set in.

Although things presently are looking positive, we aren't out of the woods yet as alfalfa fields may still be subject to icing or drowning depending on how the spring thaw unfolds

For more information on understanding and reducing the risk of winterkill to your alfalfa click on [Winterkill Risks.](#)