

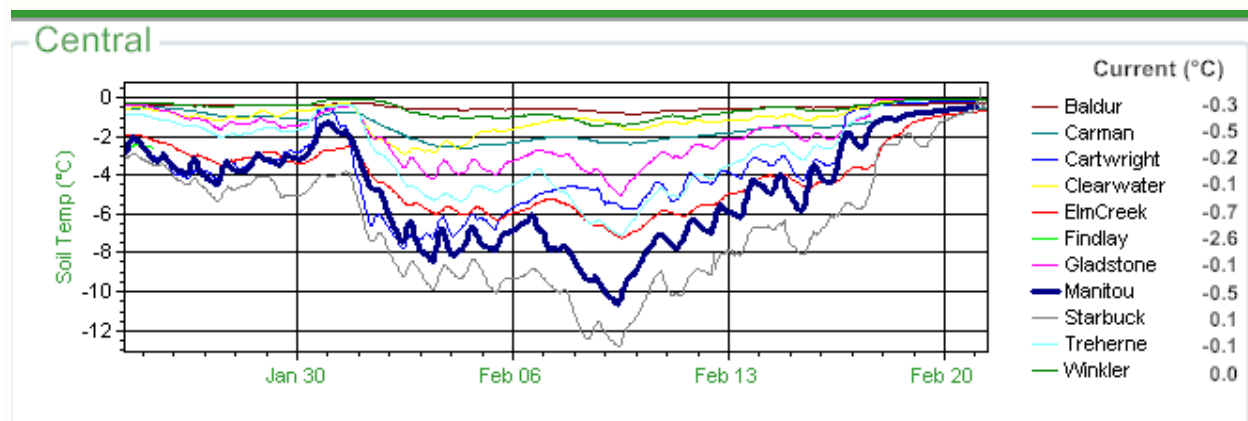
## Be Alert to the Risk of Alfalfa Winter Injury

*By John McGregor, MFGA Extension Support*

Every winter alfalfa growers worry about what the weather may do to their fields.

It's very hard to predict winterkill in alfalfa and although I tend to look at soil temperature first when predicting problems, there are a lot of other factors like snow cover, cutting schedule, nutrition etc that factor into the equation.

At this point in Manitoba's winter, I see two factors that raise red flags for potential winterkill. The first was the cold spell we experienced during the **week of Feb 6-13**. Soil temperatures dropped to the -8 to -12 range in some locations.



**1** Click on graph for other locations

Alfalfa, once dormant, can survive in soil temperatures up to minus 12 C, however if the plant is not fully dormant, or if the variety is less winter hardy, it can be injured or killed at these temperatures.

The second factor is the warm weather we experienced the **week of Feb 16-21**. Well above normal temperatures may, in some situations, cause melting of the snow pack and water to pond in alfalfa fields. Although alfalfa goes dormant during the winter period it is still a living, breathing plant. When ice forms on the soil surface during the winter period as the alfalfa roots respire, they produce some gases that can become toxic to alfalfa plants if too concentrated. The formation of an ice layer prevents these gases from escaping causing the plant to suffocate.

As we move closer to spring there are other factors that could contribute to winterkill. Just as snow insulates the plant against extreme cold, it also acts as a buffer to warmer temperatures, reducing the likelihood of the plant breaking dormancy too early and going through a series of warming/freezing cycles that can injure the plant.

Another factor is the excessive soil moisture entering into winter. Wet soils in the fall or early spring can lead to ice sheets forming or frost heaving (more common in clay soils), which can break roots and lift and expose crowns to weathering. While there's little farmers can do about excess moisture, it's important to note early wheel traffic can cause excessive damage to crowns and plants exposed by heaving frost or those already weakened by winter injury.

It's impossible to predict if alfalfa will be hurt this winter, but since weather conditions have been risky I suggest that you be ready to check your fields and make any necessary adjustments early.