



Winterkill - Plan Ahead

By John McGregor, MFGA Extension Support

The winter of 2016-17 was extremely hard on alfalfa fields' in most of Manitoba. Warm weather and rain in January and February caused extensive winterkill to many acres of alfalfa and left many producers scrambling to find alternative sources to make up the unexpected shortfall.

The winter that we are presently experiencing – cold weather in January and February coupled with below normal snow cover – has the tell-tale signs of potentially damaging the existing alfalfa crop across Manitoba

Now that I've painted a doom and gloom picture for the coming growing season, and before you go out and sell all your cows, this scenario is based on soil temperatures at various locations in Manitoba and not what's happening in your field. There are many factors that contribute to winterkill besides soil temperature including snow cover, fertility, age of stand, cutting frequency and nutrient storage in the crown and root going into winter.

Once the snow is gone and we start seeing warmer temperature you will need to check your fields for winterkill. Some of the things that you will be watching for are:

1. Slow or no "green up" in all or portions of the field.

If plants are dead, there will be no regrowth. There may be portions of the field that are green while other areas remain brown. Alfalfa is a perennial that hibernates during the winter. In the fall, energy reserves are stored in the roots and crown buds are formed. The reserves provide energy during the winter and in the spring shoots grow from the crown buds. Injury can destroy the roots and crowns but often some crown buds survive and slowly re-grow; however, this may be limited to only a few per plant and these may be stunted or chlorotic (yellow).

2. Uneven regrowth

Damage to several of the crown buds during the winter will create uneven regrowth. The plant has potential to regenerate new crown buds, but this regrowth is typically delayed. Plants look "scraggly." If the plant root has been damaged, some shoots may die.

3. Root damage

Healthy roots are firm and white. Injured roots are spongy, grey, and if twisted, water can be expressed. Over time, injured roots will become diseased, rot and turn dark

brown. A damaged root cannot sustain crown bud growth. The unfortunate thing about winterkill is that by the time it is accessed and the amount of damage is determined we are already well into the growing season. If you don't have a plan for this situation you may be scrambling to find an alternative source of forage which can lead to further delays and missed opportunities - best seeding dates or ideal seeding situations like moisture and temperature.

Finding a forage crop to offset losses due to alfalfa winterkill takes planning. Simply seeding alfalfa into an injured stand isn't a good alternative. Older alfalfa plants release chemicals (auto toxicity) that can reduce the productivity of newly seeded alfalfa, and in some cases, kill the new stands. When seeding into a damage alfalfa field the best alternative is to rotate to a silage or small grain forage crop.

Although there are a number of alternative crops to consider and they all have pros and cons, some recent work out to Wisconsin and Minnesota looking at alternatives found that the highest yielding forage crops didn't necessarily have the highest economic returns nor had lower nutritional values. One of the crops that showed a lot of promise was annual ryegrass. It exhibited high yields and high nutritive value as well as consistent establishment throughout the study sites and years.

Some earlier work in [Ontario](#) found that annual ryegrass is adapted to relatively cool climates with ample rainfall. It thrives on soils with high fertility, especially nitrogen and can be used as an emergency source of forage or as part of a planned crop rotation.

In Ontario, three cuts per year are possible, although two cuts followed by a grazing pass may be more practical. Aftermath growth is very dependent on rainfall. Annual ryegrass is ideal for late fall grazing since it continues growing into October and winter survival is not a consideration. Under good conditions, annual ryegrass can provide high yields of average quality, highly palatable forage. Under poor seedbed conditions, annual ryegrass yield will often be disappointing. Producers in Manitoba that have grown annual ryegrass do recommend that you consider silaging the crop due to its potentially dense nature and slow drydown.

With the winter we are having it's hard to believe we won't see some damage to alfalfa fields this spring but planning ahead can make it a lot easier to deal with any potential shortfalls. Hopefully all your fields will Green-up this spring.