



Cornell University  
Cooperative Extension  
Northwest New York Dairy, Livestock & Field Crops Team

## Evaluating Alfalfa for Winter Injury

Appropriate varietal selection, fertility, planting dates, and harvest management greatly increase the winter survival of alfalfa. The extreme cold and lack of snow cover in northwestern NY during the 2013-14 winter have put alfalfa fields at greater risk of damage this year.

### Effects of Management

The risk of winterkill goes up with increasing winter-hardiness ratings. In NY alfalfa varieties should have a winter-hardiness rating of 1 or 2. Winter-hardiness ratings are different than fall dormancy ratings (how tall alfalfa grows after September 1<sup>st</sup>). In the past a lower fall dormancy rating also meant a variety had increased winter survival. However breeders have separated out the winter-hardiness & fall dormancy traits in recent years. Having higher fall dormancy ratings will lead to increased fall and early spring growth along with faster regrowth between cuttings. Proper pH and fertility (especially potassium) are critical for alfalfa to survive the winter. Alfalfa needs at least 6 weeks of growth to develop a crown, requiring an August or early September planting date in our region. Taking a late fall cutting, leaving less than 6 inches of fall stubble, harvesting less than every 30 days in the growing season, and having an older stand all increase the chances of winterkill. A scorecard for evaluating the risk of winterkill to alfalfa is available on page 54 of the [Alfalfa Management Guide](#) available at [www.nwnyteam.org](http://www.nwnyteam.org).

With the shallow soils in much of northwestern NY, perennial grass species like tall fescue, orchardgrass, reed canarygrass, and timothy are often planted with alfalfa. Having these grasses in the mix reduces the risk of yield loss from winterkill because they will survive if the alfalfa is damaged. However if too much fall growth was left in the field these grasses can be damaged by snow mold similar to small grains.

### Effects of Weather

The weather conditions that put small grain stands at risk for winterkill also are hard on alfalfa. Alfalfa stands without 6 inches of snow cover, prolonged temperatures below 5°-15°F, and temperature spikes over 40°F during the winter will likely have some damage. The crowns of alfalfa are shallower than small grains and are consequently more vulnerable to freezing and heaving damage. In addition to these conditions, the excessive soil moisture from the fall of 2013 makes damage from ice sheeting a greater risk this year in alfalfa fields in our region. Damage plants will resemble those on the right in

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### Evaluating Alfalfa Stands

A number of signs can indicate winter damage to alfalfa stands. Fields that remain brown longer than others are probably damaged. If the alfalfa plant only has shoots growing on one side of the crown, the buds were injured over the winter. Damage to buds can also result in uneven shoot growth in the same plant. However the best way to evaluate alfalfa is to dig up 4-6 inches of roots. If the roots have a grey water-soaked appearance, look brown and stringy, and/or can easily have water squeezed out the plants then winterkill has occurred.

Contact your crop consultant, myself, or Mike Stanyard if you have a question about alfalfa stand evaluation.

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