



CROP ALERT

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Evaluating Winter Small Grain and Alfalfa Winter Damage

While it's been a long, cold winter the heavy snowfalls have been a blessing for small grain and haylage fields, providing a protective insulating layer for these crops in many cases. Much of this snow is beginning to melt across western NY, *Figure 1*. Even so be sure to get out and evaluate these fields for winter injury. See these guides for more information on evaluating [alfalfa](#) and [small grains](#).

Figure 1: Small Grain Field



Source: Bill Verbeten

Early Nitrogen On Winter Small Grains

Many farmers are anxious to begin field operations in small grain fields. Much of the snow will hopefully melt slowly during next couple of weeks, allowing the first nitrogen applications on small grain fields with temperatures hovering around freezing. However a number of factors increases the chances for nitrogen losses at this time of year:

- Saturated & frozen soils
- Liquid urea fertilizers
- High pH/limestone, muck, & sandy soils
- Warmer temperatures

NH₃ volatilization is the main way nitrogen is lost. A number of practices can help reduce these losses:

- Apply Agrotain-treated urea (a urease inhibitor– keeps urea in the soil for longer).
- Apply ammonium sulfate (AMS) (lower hygroscopicity-doesn't absorb water as quickly).
- Delay nitrogen applications until soil conditions improve (all snow melts, fields partially drain).

Table 1: Nitrogen Applications Using Tiller Count

| Tillers/square yard | Nitrogen at green up |
|---------------------|----------------------|
| <300 | 60 lb./A |
| 450-600 | 45 lb./A |
| >700 | 30 lb./A |

Small grains will likely also respond to the sulfur because our air is clearer now than in the past. If you are trying to time these applications try tossing a handful of Agrotain-treated urea or AMS on a nearby small grain field or your lawn and wait until that area greens up before you head to the fields. Putting the nitrogen early in the morning or later in the day will reduce the chances of rutting up this fields. These first nitrogen applications should be only 25-50 lb./acre of nitrogen until tiller counts can be made, and a second nitrogen application made when the first node appears at first node appearing at Feekes 5.0-6.0, *Table 1*. Once we are fully into spring, liquid

nitrogen applied through stream bars will likely give better results than dry fertilizers.

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If your wheat is following soybeans, had manure applied, or if you have higher soil OM less nitrogen is needed. Mike's March 2014 Ag Focus article ["Early Season Wheat Management Tips"](#) has more information on this topic.

Small grain silage fields (mostly winter triticale) with recent manure histories should receive 20-30 lb./acre of nitrogen at green-up to ensure early season nitrogen availability. They probably won't respond to higher fertilizer levels. Non-manured fields can respond to nearly 100 lb./acre of nitrogen, however most of the yield gains can be achieved with 50-60 lb./acre of nitrogen. Winter triticale silage crude protein will increase by ~1% for every 18-20 lb./acre of nitrogen applied. Malting barley fields should have most of their lower nitrogen rates (20-60 lb./acre) applied as early as practical to avoid nitrogen losses, but also keep CP in the grain to less than 12%, within 11% being ideal for brewers. Organic farmers should apply some Chilean nitrate to their winter small grain fields because, like in conventional fields, nitrogen from manure, soil OM, and legumes will not be available until the soil warms up later in the season.

Frost Seeding Legumes & Grasses

Forecasted temperatures for the next couple of weeks will create freeze-thaw cycles that will help farmer frost seed legumes and grasses. Sandy soils have little clay so they don't freeze and thaw as much, which leads to lower chance of success for frost seeding these fields. Red clover is the most common forage frost seeded and it is often very successful even when broadcasting into small grain fields, pastures, or hay fields. When frost seeding other legumes (Ladino & Alsike clover, birdsfoot trefoil, and alfalfa) establishment is more variable when broadcasted and is generally better with a no-till drill. Rolling the soil may also improve seed to soil contact. All grasses should be frost seeded with a no-till drill. If they are not drilled, establishment of grasses will be in small patches instead of uniform rows. Generally orchardgrass and perennial ryegrass will establish better than other grasses when frost seeded. Seeding rates for frost seeding are listed in Table 2. Pay attention to soil conditions so you don't end up burying your tractor and drill. For growers frost seeding red clover into wheat, increase the seeding rate to 12-15 lb./acre.

Table 2: Frost Seeding Rates

| Crop | Frost Seeding Rate (lb./acre) |
|-------------------------|-------------------------------|
| Red Clover | 8-10 |
| Ladino or Alsike Clover | 2-4 |
| Birdsfoot Trefoil | 5-8 |
| Alfalfa | 6-10 |
| Orchardgrass | 2-5 |
| Perennial Ryegrass | 3-8 |

Sources: [Ohio State](#), [Iowa State](#), [University of Minnesota](#)