



Assess Alfalfa, Winter Cereal and Grass Stands for Spring Reseeding Decisions

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I think we all agree that this past winter felt overly long and cold, and as it wore on, became downright miserable for most human beings in the North Country and across the Northern US. The snow has now receded and soils are beginning to warm enough to green up most hay fields and pastures, and it’s time to make decisions about spring forage seedings. Some fields may have suffered extensive stand losses and will subsequently require reseeding or replacement. Losses are often variable and but are most extensive on flatter, compacted, more poorly drained sections of fields where snowmelt and rain may have ponded and frozen for an extended length of time. Open, windswept areas of fields can also be at risk if an insulating layer of snow was thin or non-existent while temperatures were below 15 degrees, leaving plants exposed to harsh cold and wind. While sod grasses, red and white clovers and birdsfoot trefoil can reseed themselves or fill in damaged, thin or bare areas, alfalfa and bunch grasses will not. In the latter case, bare areas are likely to fill in with low-yielding winter and summer annual weeds. It is important to evaluate stands early this spring to explore your options for managing thin, patchy hay fields, pastures and small grain fields.



Be watchful of alfalfa, grass and small grain fields, or portions of fields, which appear to be slow to ‘green up’ over the next couple of weeks. Most grasses are now greening and beginning to grow a bit on warm sunny days. When spring growth has reached 3-4” high, scout these fields for injury, frost heaving, root damage and death. The first step in evaluating your own fields is to count the stand density or plant population, which is indicative of the yield potential of the field. With a clipboard or notebook, walk the field in a random or ‘W’ pattern and choose 10 representative locations in the field to count the number of plants per square foot. You can make a 12” x 12” wooden or PVC square to make this task easier. For alfalfa, toss the square down and count and record the number of alfalfa crowns within the square. Be sure you count

Table 1. Alfalfa Population Guidelines for New Seedings and Established Stands

Harvest Year	Optimum Stand	Adequate Stand
	<i>- - crowns per square foot - -</i>	
New Spring Seeding	25-40	12-20
1st hay year	12-20	6-10
2nd hay year	8-12	4-6
3rd and older	4-8	2-5

crowns, not stems. For grasses and cereals, put the square down and count the number of plants within the square. Be sure to count grass or cereal plants, not tillers. Before moving on to the next location, also record whether the surviving plants appear healthy. Dig up a couple of alfalfa plants and examine the taproot. Slice the taproot lengthwise and observe root tissues. Is the root white, firm and healthy? Or is it dry, brown and ‘ropey?’ Is the taproot brown in the center? If the alfalfa root is browned, dehydrated, and ropey, it is dead or dying. Do the grass or grain plants appear to be viable? Count just the living, healthy legume, grass or cereal grain plants.

Average the stand counts from the 10 locations within the field. Compare the average stand count with some guidelines to understand the yield potential of the field. For alfalfa, compare your stand counts to Table 1. If your stand count is marginal, also consider the relative health of the

Table 2. Grass and Small Grain Population Guidelines for 50% ground cover

Established stands	Marginal Stand	Inadequate Stand
<i>-- crowns per square foot --</i>		
Smooth brome	>2	<1
Tall fescue	>2	<1
Orchardgrass	>4	<2
Kentucky bluegrass	>6	<3
Timothy	>6	<3
Redtop	>6	<3

surviving plants. In pure grass fields, good ground cover is essential for weed suppression and yield potential. If established bunch grasses (i.e. orchardgrass, timothy, reed canarygrass, perennial ryegrass) or a sod-forming grasses (i.e. Kentucky bluegrass, brome, redtop, tall fescue, quackgrass) are damaged to below 50% ground cover, consider reseeding or renovating. Table 2. Lists some guidelines for when plant density may fall below 50% cover for some selected grass species. Winter cereal grains can tolerate relatively large reductions in plant density before it becomes more profitable to replant with spring grains. As few as 12-15 plants per square foot is considered a minimum plant density for adequate yield potential. Good spring populations are from 23 to 30 plants per square foot and densities above 30 plants per square foot are considered excellent. If you’ve counted minimal plant density and the plants also do not appear healthy, consider the stand below the minimum and consider reseeding with a spring cereal or another crop. For thin stands, adjust fertilizer applications and take care to adequately control weeds. If replanting, consider the following:

- When planting after May 20 replant with a higher seeding rate to compensate for the reduced tillering of the late-planted crop.
- After June 1, use higher seeding rates AND choose the earliest varieties that are available, or consider growing an alternative short-season crop.
- Planting small grains after June 21 is not recommended.

If alfalfa or small grain stands are below minimum replanting recommendations, consider some alternative crops. First, calculate your existing forage and grain inventories to know how much flexibility you have for reseeding and replacement crops. If inventories are in surplus, you have the luxury of reseeding slower or later maturing crops. However, if inventories are scarce, you’ll need to consider earlier maturing crops for quicker production.

Often, crop losses will be patchy. If you decide to continue to manage and harvest an injured alfalfa field, allow plants to mature a bit longer before cutting. This delay can help plants recover

and preserve future yield potential. For severely-damaged, but not killed, alfalfa fields, allowing plants to mature to full bloom before taking a first cut can also avoid further losses. Delay to early flowering stage for subsequent cuttings. Increasing the cutting height may also help stands recover. Do not harvest winter-injured stands late in the fall to allow them to store reserves before winter. If the field is an alfalfa-grass mix, you could choose to fertilize and harvest it as a grass field. If the losses are 25-50%, consider no-till drilling in clover or orchardgrass. When overseeding winter-injured stands, remember to adequately fertilize and control for weeds.

Depending on degree of damage and feed inventories, consider replacing the alfalfa stand with corn, BMR sorghum, millet or another summer annual forage. Alfalfa generally should not be reseeded or overseeded into the same stand due to autotoxicity issues. To quickly generate forage while also seeding a new alfalfa stand, plant another field with an alfalfa-grass mixture with an oat companion crop. Cut the oats high at the flag leaf stage for a late July/early August forage crop.

Lastly, before destroying a poor stand of forage or grain, be sure to calculate the input costs you've invested into the existing crop, the costs of establishing a replacement crop in relation to the expected yields of both existing and replacement crops, rotation benefits of both options, as well as current crop prices and availability. Refer to the 2015 Cornell Guide for Integrated Field Crop Management for recommendations and guidance for planting and managing corn, soybeans, forages and small grains.

Additional resources:

1. Evaluating Winter Injury to Alfalfa. Jerry Cherney, Leon Hatch and Ed Goyette, Cornell University. <http://forages.org/page.php?pid=44>.
2. Alfalfa stand assessment: Is this stand good enough to keep? 2011. Undersander et al, Univ Wisconsin Extension. <http://learningstore.uwex.edu/assets/pdfs/a3620.pdf>
3. Assessing Alfalfa Stand Conditions in the Spring. 2013. Undersander et al, Univ Wisconsin Extension. <http://fyi.uwex.edu/drought2012/files/2013/04/Assessing-Alfalfa-Stand-Condition-in-the-Spring.pdf>
4. Wheat Stand Assessment, Winterkill Yield loss, and Nitrogen Application. Conley & Gaska. Univ Wisconsin Extension. http://www.coolbean.info/pdf/small_grains/early_season/Wheat_Winterkill_09.pdf
5. 2015 Cornell Guide for Integrated Field Crop Management. 2015. Bill Cox, ed. Cornell Univ. Cooperative Extension.

For more information about field crop and soil management, contact your local Cornell Cooperative Extension office or Kitty O'Neil, CCE of Northern NY, 315-379- 9192 x253; kao32@cornell.edu.

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