



WINTER-DAMAGED ALFALFA STANDS: LOVE ‘EM, LEAVE ‘EM, OR LEVEL ‘EM? BUT ABOVE ALL, LIVE AND LEARN

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If you haven't already, please take a close look at all of your alfalfa fields. We've had enough reports of winterkill and injury to feel justified in exhorting you to take the time to look closely at all of your alfalfa fields. While potential return from alfalfa is high, the fixed costs to conserve and feed it continue to climb, so yield potential must be high to justify the effort.

We see 3 scenarios (and recommendations) with winter-damaged alfalfa stands:

- 1) patchy, usually topography-related, winterkill (love ‘em)
- 2) fairly uniform injury and/or thinning (leave ‘em)
- 3) too damaged to keep (level ‘em)

Love ‘Em. Fields with patchy winterkill are often worth working with for at least another year, especially if high-quality forage inventories are low. Large winterkilled areas should be fairly easy to fix. Non-heading Italian ryegrass, seeded at 10 to 20 lb/ac, is probably the best bet for haylage acreages (more Italian ryegrass info at http://forages.cfans.umn.edu/Italian_Ryegrass.html and www.extension.umn.edu/cropenews/2005/05MNCN14.htm). In recent WI research, Dr. Ken Albrecht has documented that some ryegrass varieties marketed as Italian types can head during the seeding year. While heading may offer some drying rate advantages, non-heading Italians will have higher forage quality and thus be a better fit for dairy cows.

In addition to non-heading Italian ryegrass, ½ to ¾ bu/ac of a small grain would provide quicker cover and weed control and boost first cutting yield. For milk cows, wheat would likely provide the most palatable silage, followed by oats, then barley. The grass component of subsequent haylage crops will be Italian ryegrass dominant (yield distribution data at http://forages.cfans.umn.edu/Italian_Ryegrass.html). A no-till drill will provide most consistent results; but a standard drill should work if the ground is still fairly

soft. Some light tillage in these areas before seeding can help. However, care must be taken to attempt to minimize traffic over the good alfalfa areas of the field. Wheel traffic will break many shoots and reduce first-cutting yield potential.

Leave ‘Em. If your high-quality forage inventory is low, the best option for stands that are fairly uniformly thinned and/or weakened may be to leave them be for at least a first cutting. Attempting to inter-seed something into these stands may not yield much. Existing shoots will be damaged by the traffic, and several WI studies have demonstrated little benefit to inter-seeding into these stands (www.uwex.edu/ces/crops/uwforage/ThickeningAlfalfaFOF.htm). In general, >55 stems per square foot are needed for high yield potential. Between 40 and 55 stems per square foot is the gray area where this recommendation applies, perhaps even down as low as 30 to 35 stems per square foot if short-term forage supply is really low. If you think there's a possibility you may want to keep the stand beyond first cutting, let the first cut mature a little more to restore more root reserves and cut a little high if you see 2nd crop shoots emerging from the crowns.

If you terminate the stand after a first cutting, there are a number of good high-yielding annual crop options that can take full advantage of the fixed N left behind by the alfalfa. Corn silage will usually provide the highest single-harvest DM and energy yield (<http://www.uwex.edu/ces/crops/uwforage/CornAfterAlfFOF.htm>). Sorghum-sudan, sudangrass, and hybrid pearl millet can provide two or three good cuttings after an early June planting; their total season DM and energy yields will usually not match those of corn silage, but harvestable forage becomes available sooner, and crude protein is greater. Foxtail millets provide a dependable one-cut option that can provide good yields within 60 days, though not of dairy cow quality. An advantage of the short-term forage crop though is that a

new stand of alfalfa can be established in early-mid August following millet harvest. This should work on lighter soils when summer precipitation is adequate. But on heavier soils, it's best to wait until next spring to attempt to reseed alfalfa to avoid potential autotoxicity damage.

Level 'Em. Where stem counts are well below 40 per square foot, it's generally best to terminate the stand now. These fields provide an ideal soil N environment for a high-yielding corn silage crop. Or a small grain could be grown and alfalfa reseeded in August on lighter soils with adequate moisture.

Live and Learn (*thanks for enduring the "L" theme*). Don't give up on alfalfa. It has too much to offer. But do give serious thought to how to best use alfalfa and improve its chances for success on your farm. We tend to place too much of the high quality forage burden on alfalfa; expecting it to carry the full load, even in situations where persistence challenges are likely. There is still plenty of time to do a good job of seeding new thick forage stands; until mid-May in southern MN/WI, and until around June 1 in northern MN/WI. But think about how you can give alfalfa a better chance to do well on your farm.

- **Site selection** – seed alfalfa and alfalfa-dominant mixtures only in well-drained fields that have adequate pH and fertility before seeding.
- **Variety selection** – experiment on your farm with different varieties. Use variety trial results to help you choose what varieties to try. Pay special attention to WSI and fall dormancy ratings – lower numbers mean better persistence potential. Seed cost is trivial in comparison to the other fixed costs of forage conservation.
- **Harvest timing** – there is growing evidence that a key to persistence is allowing at least one crop per year to become well flowered. At Fargo, ND, Dr. Dwain Meyer has completed 3 consecutive years of 4 cuttings per year including a fall cut with little if any winter injury to two alfalfa varieties including one with a WSI of 3.0! A consistent strategy he has used is to delay that fourth cutting until either 50% bloom or when 2-3 inches of regrowth has emerged from the crowns.
- **Consider the potential benefits of grazing the forage instead** – the costs of harvesting, storing, feeding, and hauling manure continue to climb. On top of that, both yield and quality of what's presented to the livestock be-

gins to deteriorate as soon we start cutting. With grazing, the livestock are taken to the field to handle all the harvesting and manure hauling, and they will choose first the most nutritious parts (the leaves) that we so often lose too much of with machine harvest. An advantage of grazing the fall crop as opposed to harvesting it is that animals will tend to consume the high-quality leaves and stem tips and leave a lot of residual stem – this achieves fall “harvesting” of the best, leaving the rest to provide cover and snow catch.

- **Seed alfalfa in mixtures** – In nature, perennial plant communities across variable land are never monocultures. Yet we seed alfalfa monocultures in rolling fields with all sorts of areas that can get alfalfa into trouble: low wet spots, northwest slope and hilltops where the snow won't stick, and south-facing slopes where alfalfa gets fooled into breaking dormancy too soon. Seeding legume-grass mixtures in these fields would be a lot less risky and often provide higher-quality forage.

Consider a brief basketball team analogy by the lead author. About 75 pounds ago, I played a lot of basketball. I provided some important, albeit limited, benefits to the teams on which I played: size (“yield”, or “filling up a lot of space in the paint” as my coaches often said) and rebounding. But if the team had five guys like me on the court, it would have been disastrous. Instead, we fielded 5 compatible guys with different skills and attributes, some overlapping, but some very unique to each person; e.g. speed and aggressiveness (rapid recovery), stamina (persistence), scoring (high forage quality), and passing (N-fixing legumes, sod-forming grasses). A heterogeneous mixture of attributes provides robustness and versatility.

We think this analogy applies to perennial forage stands, especially on variable fields. Examples of other forage species that can complement alfalfa in mixtures include:

- Winter-hardy grasses such as reed canarygrass (http://forages.cfans.umn.edu/Reed_Canarygrass.html) and smooth brome grass – both are sod-formers, too, which will reduce traffic damage and heaving potential;
- Rapid-recovery bunch grasses such as orchardgrass and tall fescue;
- High-quality, short-term, but easily over-seeded grasses such as perennial ryegrass and festuloliums;
- *Note: Remember that grasses generally have bet-*

ter feeding value than has previously been perceived. Though grasses usually have more fiber (higher NDF) than legumes, that fiber is often considerably more digestible (higher NDFD) – so don't shy away from well-managed grasses as a potentially important component in dairy cow diets.

- Other legumes such as new, more persistent varieties of red clover, which can better handle low spots in fields and improve the protein quality of haylage (www.uwex.edu/ces/crops/uwforage/RedCloverCows.html). And despite its establishment challenges, two decades of MN and WI research have documented that Kura clover is a worthy candidate for haylage and pasture mixtures because of its tremendous winter hardiness and versatility (www.uwex.edu/ces/crops/uwforage/KuraAlbrecht.htm).