

PREVENTING WINTER INJURY IN ALFALFA

Brian Gueck, America's Alfalfa Brand Manager

After an unusual winter filled with a variety of weather conditions, alfalfa producers in several areas of the country are approaching this spring with concerns about stand health. Many farmers might find winterkill to be a more serious problem than usual, and although they will be forced to work with the hand they've been dealt this year, there are ways to enhance stand health and prevent winter injury with future stands.

Don Eckhoff, America's Alfalfa sales manager for Direct Enterprises, says alfalfa didn't get the chance to harden off like it normally does this winter, making it more vulnerable to cold spells and ice events. Alfalfa stands seeded late last summer are especially at risk, as they were less likely to build up the persistence needed to survive the abnormal conditions.



"A lot of alfalfa-producing areas had an extended and rainy fall, which was followed by a mild winter," Eckhoff explains. "But sub-zero temperatures and ice storms were a problem – especially when there was a lack of snow cover to protect alfalfa plants. A false spring is also of concern, as the record high temperatures in February led some stands to break dormancy too early, well before another deep freeze could be experienced."

Variety Selection is Key

Preventing future winter injury starts as early as selecting the right alfalfa variety for your acres – a decision some farmers will need to make sooner than others depending on how stands rebound this spring. If reseeding a stand that was planted last year, or rotating back to alfalfa this spring, Eckhoff encourages farmers to pick a traited variety of either HarvXtra® Alfalfa with Roundup Ready® technology or a Genuity® Roundup Ready® variety with the best disease rating scores for their area and a winter-hardiness score in the range of 2.2 or less.

"HarvXtra® alfalfa is an excellent choice for new stands because it has excellent stand persistence, strong winter-hardiness and high disease resistance," Eckhoff says. "It carries the reduced lignin trait and comes with the Genuity® Roundup Ready® weed control system, which helps limit the amount of stress that plants are exposed to during the growing season."

The HarvXtra® trait is a breakthrough in technology that slows the rate at which forage quality decreases. This is done by changing how alfalfa plants produce lignin, which is indigestible and binds with other cell wall components to limit their digestibility. By retaining forage quality for a longer period of time, HarvXtra® alfalfa can be harvested less often – resulting in improved stand health and higher yield potential.

Less-Frequent Harvests Improve Stand Health

While 5- or 6-cut production systems provide high quality forage, they also force alfalfa to work harder, exposing stands to a lot more stress than 3- or 4-cut systems. Therefore, eliminating a cutting from a harvest schedule and supplying adequate fertility enables plants to better recover between cuttings. This allows alfalfa plants to retain higher carbohydrate and nutrient levels, which results in a stronger root system, a stronger crown and better plant health overall.

While fewer cuttings over the course of a growing season typically ends up providing farmers with a higher yield potential, the down side to spacing out harvests by an extra 7 to 10 days has always been reduced forage quality.

Photos from two studies performed by Forage Genetics International from 2011-2013 show how making one less cutting in a production year resulted in a healthier stand and higher yield potential the following spring:

- Figure A, which shows a field in Boone, IA, in May of 2013, illustrates the impact that winterkill had on the stand on the right side of the photo, which was harvested five times during the previous year. The stand on the left side, which was harvested only four times in 2012, exhibited much better winter survival.
- Figure B shows the spring regrowth of two alfalfa stands in Touchet, WA, in March of 2013. The stand on the left was harvested six times in 2012, while the stand on the right was cut five times. When harvested about two months after the photo was taken, the 6-cut stand on the left went on to have a first-cut yield of 3.6 tons/A, while the five-cut stand on the right ended up yielding 4.55 tons/A on its first cutting.

Utilizing the value of a HarvXtra® alfalfa variety enables producers to harvest on a 35-day schedule and get the same quality as conventional alfalfa harvested on a 28-day schedule. Some HarvXtra® alfalfa producers might opt to drop down to a 3-cut schedule to maximize yield potential even further. As a result, they can help preserve stand health, potentially help prevent winterkill, and take advantage of the higher yield potential that comes with fewer cuttings. Multiple trials conducted by the University of Wisconsin have shown a 15 to 20 percent forage yield advantage for a 3-cut vs. 4-cut management system over a 4-year rotation.

In addition to the higher yield potential that a 3-cut system can provide, producers can also save time and money by making fewer cuttings.

“Although research hasn’t been performed to show the impact a 3-cut schedule has on alfalfa stand life vs. a 4-cut system, it makes sense that if a stand looks and performs better with a longer resting period between cuttings, a farmer might be able to keep their stand in rotation for an extra year or two and still realize good yield potential,” Eckhoff adds.

Timely Final Harvest Improves Persistence

Finally, in order to give alfalfa enough time to build up proper nutrient levels to aid in carbohydrate storage needed for winter-hardiness, Eckhoff reminds farmers to schedule their last cutting so that their stands receive 500 growing degree days (GDD) – or 6 weeks on average – before experiencing a killing frost (25 degrees Fahrenheit or less).

“This allows alfalfa to rebuild its carbohydrate reserves to survive the winter with minimal stress,” Eckhoff concludes. “The closer you cut to the first frost, the less chance you give the plant to build those reserves.”

Contact your local agronomist and [click here](#) for assistance in evaluating your stands this spring. And for more information on how utilizing HarvXtra® alfalfa technology can help you maximize yield potential and improve stand persistence, call your local America’s Alfalfa retailer or visit americasalfalfa.com.

For the 2017 growing season, growers must direct any product produced from HarvXtra® Alfalfa with Roundup Ready® Technology seed or crops (including hay and hay products) only to United States domestic use. In addition, due to the unique cropping practices do not plant HarvXtra® Alfalfa with Roundup Ready® Technology in Imperial County, California, pending import approval in China and until Forage Genetics International, LLC (FGI) grants express permission for such planting. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their product purchaser to confirm their buying position for this product.

Do not export Genuity® Roundup Ready® Alfalfa seed or crop, including hay or hay products, to China pending import approval. In addition, due to the unique cropping practices do not plant Genuity® Roundup Ready® Alfalfa in Imperial County, California, pending import approvals and until Monsanto grants express permission for such planting.



Figure A: This field in Boone, IA, was planted in 2011 with proven conventional varieties and HarvXtra® experimental varieties. The stand on the right side was harvested five times on a 28-day cutting schedule in 2012, while the stand on the left was harvested four times on a 35-day cutting schedule. Both stands had a similar final harvest date in 2012. Note the winterkill experienced by the 5-cut stand.



Figure B: Also planted in 2011 with proven conventional varieties and HarvXtra® experimental varieties, this field in Touchet, WA, shows the spring regrowth of two alfalfa stands on March 5, 2013. The stand on the left was harvested six times in 2012, while the stand on the right was harvested five times. When harvested for the first time in 2013 on May 9, the 6-cut stand on the left went on to yield 3.6 tons/A, while the five-cut stand on the right ended up yielding 4.55 tons/A on May 15, 2013.