



## TERMINATING CONVENTIONAL ALFALFA STANDS

- Successful termination of alfalfa prior to rotation is important because remaining alfalfa can compete with the next crop.
- Tillage, herbicide, or a combination of the two practices can be used for alfalfa stand termination depending on timing, crop rotation, and environmental conditions.
- Contact your agronomist or weed management representative for more information.

### Assessment of Alfalfa Stand

Ideally, the decision to rotate away from alfalfa should be based on economics, but often that is not the case. Research has suggested that farmers can maximize net return from an alfalfa crop by rotating away after one establishment year plus 2 to 4 subsequent production years.<sup>1</sup> Often, however, the decision to terminate an alfalfa stand is made due to unplanned factors such as: winterkill, weedy or diseased fields, changes in government programs, or because land was needed for other purposes.

When assessing stem density for potential yield, use Table 1 for some general recommendations. Especially in the marginal category (40-55 stems), quality of plant health can be important in determining stand potential.

**Table 1. Using Stem Density to Evaluate Alfalfa Stands**

Density (stems/ft <sup>2</sup> )	Action
Over 55	Stem density should not limit yield potential
40-55	Stem density limiting yield potential
Under 40	Stem density severely limiting yield potential.

*Adapted from Cosgrove, D. and Undersander, D. 2003. Evaluating and managing alfalfa stands for winter injury. Univ. of Wisconsin Extension.*

### Termination of Conventional Alfalfa Stand

**Tillage** that completely cuts the roots from the alfalfa plant, such as a moldboard plow or chisel plow with overlapping sweeps, can be effective alone. However, while tillage can result in >80% mortality, several factors may affect control.<sup>2</sup> Sometimes fall tillage is used within 3-5 days after an herbicide application as this combination can improve the chances of alfalfa mortality.

**Pre-harvest herbicide application:** If using a pre-harvest application of Roundup® brand agricultural herbicide to

eliminate a declining conventional alfalfa stand, late summer to early fall is generally the best time. Up to 44 fl oz/acre can be applied as a broadcast spray at least 36 hours before harvest. Optimum harvest time is 3-7 days after application to maximize perennial weed control and maintain hay quality. This method permits for an additional cutting, can help improve the effectiveness of removal, and has no rotational crop restrictions. Even after Roundup application and harvest, additional herbicides and/or tillage may be needed for complete stand termination. Not all glyphosate products are labeled for this application, and labels should always be checked for approved use and recommendations.

**Fall herbicide application:** Advantages to fall termination include hastening the decomposition and nitrogen release processes and the potential for earlier planting due to earlier soil drying/warming. One disadvantage is that there is no opportunity to assess whether another productive year exists in the stand.

For fall application, herbicides should be applied before the first killing freeze, but when regrowth is at least 4-6 inches.<sup>1</sup> Herbicide options for fall application include the use of 2,4-D alone or tank mixed with dicamba or a tank mix of glyphosate with 2,4-D if grasses are present.<sup>1</sup>

**Spring herbicide application:** Advantages to spring removal include the ability to assess winter survival and having a winter soil cover to help prevent erosion. Spring stand termination can be challenging because it will inevitably delay subsequent crop planting. Most labels recommend at least 4 inches of regrowth to maximize herbicide control of the alfalfa, and the optimal time to plant corn usually occurs before that.<sup>1,2</sup>

The most common herbicide options for spring alfalfa termination include glyphosate, 2,4-D, and/or dicamba.<sup>2</sup> While there are no plant-back restrictions after glyphosate use, there are with 2,4-D and dicamba. Restrictions vary depending on the crop, rate, and product, so be sure to read and follow the label instructions. It is important to control alfalfa completely during stand termination as it can be difficult to control it in the rotational crop.

**Sources:** <sup>1</sup>Yost, M., Coulter, J., and Russelle, M. 2015. Managing the rotation from alfalfa to corn. University of Minnesota Extension. [www.extension.umn.edu](http://www.extension.umn.edu). <sup>2</sup>Renz, M. 2013. Alfalfa removal in the spring. Wisconsin Integrated Pest and Crop Management. <http://ipcm.wisc.edu>. Other sources: Forage termination strategies. Government of Saskatchewan. [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca). Undersander, D., Grau, C., Cosgrove, D., Doll, J., and Martin, N. 2011. Alfalfa stand assessment: Is this stand good enough to keep? A3620. University of Wisconsin Extension. Web sources verified 3/25/15.