

Managing Alfalfa Seeding

- Using quality seed and planting an optimum seeding rate are important factors that can affect alfalfa production for many years; however, managing the stand after establishment becomes as critical.
- Seed products for your field conditions should be selected based on high-yielding potential, adequate winter survival, and disease resistance.
- Genuity® Roundup Ready® Alfalfa products can provide more weed control option than a conventional alfalfa product.

Product Selection Criteria

Products should be selected based on high-yielding potential, adequate winter survival, and pest resistance.

High-yielding - Products that demonstrate high average yields across multiple years and locations are highly recommended.

Winter survival - Products should be selected based on the classifications for fall dormancy and winter hardiness for a specific region. Alfalfa stand, longevity, and forage quality are affected by the product fall dormancy and winter hardiness ratings of the product. Winter hardiness ratings should not be substituted for fall dormancy ratings. The latter ratings indicate the recovery rate of an alfalfa product, while winter hardiness ratings indicate the potential longevity of the stand.

Pest resistance - First identify the most significant pests for your region. Products that help manage aphids, nematodes, root diseases, potato leaf hopper, and silverleaf whitefly may be available for your area. Pest resistance ratings for alfalfa products are available in product profile sheets or from your brand representative.

Seeding Rates and Seed Coatings

If using a coated alfalfa seed, it is recommended to continue to use the seeding rate you have been planting. Please refer to your brand representative or local extension office for additional planting recommendations.

Considerations should be taken when planting coated alfalfa seed:

- Use the most suitable seeder for your specific soil conditions.
- Placing the correct amount of seed in firm soil at the proper depth will help create a better seed to soil contact and enhance germination and uniform emergence.
- To optimize the coated seed flow when planting, calibrate your seeder for the best success.

Always refer to the manufacturer's manual before performing any maintenance.

Nutrients and Soil pH

Alfalfa nutrient removal is high because the aboveground portion is normally harvested three to five times per growing season. Soil testing should be done to accurately estimate nutrient requirements, especially phosphorous (P), potassium (K), and soil pH levels. The recommended soil pH level for alfalfa should be between 6.8 and 7.0. Split applications of P and K based on yield goals are recommended after the first and third cuttings. More applications may be beneficial if needed; however, late winter and early spring applications should be avoided to help minimize the potential for winter injury.

Weed Control

Conventional alfalfa products have limited weed control options, which can hinder stand establishment and persistence, resulting in lower yield potential. A Genuity® Roundup Ready® Alfalfa system gives alfalfa producers the advantage of broad-spectrum weed control and application flexibility with Roundup® brand agricultural herbicides, which can help reduce crop injury or rotational concerns. Based on the weeds present, one or more herbicides with different modes of action should be used at least once during the middle years of the stand to help prevent weed shifts or resistance.



Figure 1. Regrowth of Genuity® Roundup Ready® Alfalfa (left) compared to conventional alfalfa (right).

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Companion or Nurse Crop

A second crop seeded along with alfalfa during planting is called a nurse or companion crop. Oats are one of the most commonly used companion crops to help prevent soil erosion and provide additional competition against weeds, while the alfalfa is becoming established.

A nurse crop seeded at higher rates can lower alfalfa stand density. Additionally, the forage quality of alfalfa with a nurse crop can be lower than that of a pure alfalfa seeded field.

Evaluating Alfalfa Stands

New—Before stems are visible, a sampling frame of one square foot can be tossed in the field at random locations to take counts. Plan on taking 10 to 20 samples per 10 acres. The more variability within a field, the more samples should be taken. An alfalfa stand seeded last year should have high yield potential if stand counts are 20 plants per square foot and may still yield well with as few as 12 plants. The minimum number of healthy plants per square foot for a desirable alfalfa stands ranges from 5 to 12 (Table 1).

Established—A more accurate method to assess established alfalfa stands and estimate yield potential is to count stems. This can be done once stems have begun to grow. Older stands tend to have fewer individual plants, but more stems per plant. For this method, use a sampling frame 17 inches by 17 inches or about 2 square feet. Count the stems within the frame at four to five random locations in the field. Divide this number by 2 to get average stems per square foot. Use this number to estimate the yield potential of the stand (Table 2).



Figure 2. Count stems method.

Autotoxicity

Limited seedling establishment may occur when seeding into existing stands or into a field where alfalfa was recently removed. Autotoxicity is a problem in alfalfa stands that are two or more years old. However, reseeding into an existing stand is generally successful if the stand is less than one year old and soil pH and fertility in those areas is optimum.

Autotoxic compounds produced by alfalfa can inhibit plant growth, increase the number of days to germination, reduce root and shoot length, and negatively affect future yield potential. In cases where alfalfa stands are thin, but it is not practical to destroy the stand, consider interseeding grasses or clover to meet forage needs.

Yield versus Quality

Alfalfa forage quality and yield are inversely related to the alfalfa growth cycle. Early harvest results in low yield but high forage quality, while delayed harvest can result in high yield but low forage quality.

Generally, cutting based on the growth stage of alfalfa may result in more consistent and predictable forage yield potential and quality than when harvested on a calendar basis.

Summary

- Using best production management practices after alfalfa establishment is as critical as seed selection.
- When planting new alfalfa or managing an existing stand, evaluate options for best weed management practices.
- Several considerations should be taken when using coated seed.

For additional agronomic information, please contact your local seed representative.

Table 1. Suggested alfalfa plants per square foot.*	
Production Year	Plants/ft ²
1	> 12
2	> 8
3	> 5

*Source: Morrison, J. 2009. Assessing alfalfa stands. University of Illinois Extension.

Table 2. Average stem count and estimated yield potential per square foot.*	
Stems/ft ²	Estimated yield potential (%)
> 56	100
50	90
45	81
40	72
35	62
30	53
25	44

*Source: Undersander, D., Grau, C., Cosgrove, D., Doll, J., and Martin, N. 2011. Alfalfa stand assessment: Is this stand good enough to keep? University of Wisconsin Cooperative Extension. A3620.

Sources: Vagts, T. 2003. Late summer alfalfa seeding. Iowa State Extension. <http://w.extension.iastate.edu/>. Undersander, D.J. Late summer alfalfa seeding. University of Wisconsin Extension. <http://www.uwex.edu/>. Undersander, D.J., Bertram, M.G., Cavadini, J.S., Clark, J.R., Crooks, A.E., Rankin, M.C., Silveira, K.G., Wood, T.M. 2013. Forage variety update for Wisconsin—2013 trial results. University of Wisconsin, A1525. Summers, C.G. and Putnam, D.H. 2008. Irrigated alfalfa management for Mediterranean and desert zones. University of California-ANR, 3512. Leep, R., DeYoung, J., and Min, D.H. Coated alfalfa seed, is it worth it? Michigan State University. <http://fis.msue.msu.edu>. Web sources verified 11/25/14.

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. **Monsanto Company is a member of Excellence Through Stewardship® (ETS)**. Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Commercialized products have been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. 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 grain handler or product purchaser to confirm their buying position for this product. **Individual results may vary**, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Roundup Ready® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Genuity Design®, Genuity Icons, Genuity®, Roundup Ready® and Roundup® are trademarks of Monsanto Technology LLC. Leaf Design® is a registered trademark of Monsanto Company. ©2014 Monsanto Company. 141112100853 120514SMK