



## Late-Summer Seeding of Alfalfa

### Key Concepts

- Seeding alfalfa in late-summer is a good option for establishing alfalfa to reduce the typical seeding year yield penalty.
- Seed alfalfa 6-8 weeks ahead of the first killing freeze to allow sufficient plant growth for winter survival. Look to get 4-6 true leaves by the time the growing season ends and plants go dormant.
- Only seed alfalfa into soils with adequate moisture for germination and sustained fall growth.
- Seed into a firm seedbed at 15-18 lbs/A to achieve good seed-soil contact and fast, uniform emergence of seedlings.
- Control weeds and volunteer crops prior to and after seeding to eliminate competition for water and sunlight.
- Do not harvest, clip, or graze the new seeding in the fall.

### Introduction

Late-summer alfalfa seeding is preferred in many areas of the U.S. when growing season and soil moisture conditions permit. Seeding alfalfa at this time of year is a good option as growers can establish alfalfa without the seeding year yield penalty of a spring-seeded crop. Late-summer seedings also help spread the work load on the farm and require little to no herbicide for weed control.

Figure 1. Average first frost dates in the U.S.



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Success with late-summer seedings is highly dependant on having good soil moisture for germination and having the ability to penetrate any crop residue from the previous crop. If soil moisture is insufficient to germinate and sustain the growth of the young seedlings until freezing temperatures end the season, by the next spring, an alfalfa stand may be thin, variable, or non-existent and spring reseeding may be necessary.

### The Right Conditions for Seeding

Successful alfalfa establishment in late-summer depends on several key weather, soil, and management factors. If drought or low soil moisture conditions exist already, and long range weather forecasts indicate continued dry weather patterns, then avoid seeding alfalfa. The result will be thin, variable stands that may be unable to survive winter. Planning ahead for a late-summer seeding is critical. Here are critical management factors to think about and prepare for.

#### Seeding date

- Seed alfalfa at least 45 days (6-8 weeks) prior to a killing frost so plants can grow and accumulate adequate carbohydrate reserves for overwintering. Having 4-6 true trifoliolate leaves before frost is ideal. For average first freeze dates in your geography, see Figure 1. In northern states, this translates into a seeding date of August 1-15. Alfalfa can be seeded earlier than August if soil profile moisture is high enough to sustain growth of seedling plants.

#### Field selection and preparation

- Do not seed into a previous fully established stand of alfalfa due to autotoxicity effects from the previous alfalfa plants. Reseeding a thin spring-seeded field is okay up to one year later.
- Avoid seeding alfalfa in fields with potential herbicide carryover. Check application records and herbicide labels for more information.
- Check soil fertility and apply lime and fertilizers prior to seeding. The most important macronutrients are P and K. Phosphorus is important for early seedling growth. Potassium helps drive yield, winter survival, and stand persistence.
- Control weeds prior to seeding to allow the best opportunity for the alfalfa to emerge quickly and develop normally during the late-summer and fall growth period.



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- Till or work in heavy crop and weed residue in the field to the point where your seeding equipment can penetrate adequately for good seed-soil contact.
- Prepare soil like spring-seedings where a firm seedbed gives good seed-soil contact. A seedbed should be firm enough where shoes leave an imprint of ½-inch or less. Avoid excessive tillage in late-summer since each pass dries out the soil.

### Seeding alfalfa

- Select a variety with good winter survival scores and high resistance scores for the disease and pest challenges in your region. Diseases are typically minimal with the drier soil conditions of late-summer seedings, but most will still cause trouble later in the life of the stand.
- Seed alfalfa into soils with adequate moisture for both germination and seedling growth. Irrigation may be required, where available, to initiate germination and supply moisture to the young, vulnerable plants.
- Use the same seeding rates as used in the spring. Your target is 60-80 seeds/ft<sup>2</sup> which is 15-18 lbs/A of light-coat (9%) alfalfa seed.
- By late fall, expect to see a uniform stand of 25-35 plants/ft<sup>2</sup>. Over the winter, stands will thin about 50% more leaving a spring stand of 12-18 plants/ft<sup>2</sup>.
- Do not use a companion crop with late-summer seedings to avoid competition for soil moisture and sunlight. The only exception is the use of a quick emerging small grain crop seeded at a light rate to help prevent wind damage and sandblasting of young seedlings. These protective cover crops should then be controlled when 4-6-inches tall to avoid competition with the alfalfa.

### Post-Seeding Fall Management

Once seed, a late-summer seeding of alfalfa still requires monitoring and management to make certain the crop establishes well and is in good condition to survive its first winter.

- Manage weeds or volunteer wheat to avoid competition with alfalfa for critical moisture. If a cover crop was seeded on sandy soils to prevent wind damage to young seedlings, plan to kill these plants when they are 4-6 inches tall.
- When a Roundup<sup>®</sup> Ready alfalfa variety is used, make an application of glyphosate after alfalfa reaches the 2nd trifoliate leaf stage to eliminate non-resistant plants.
- Monitor field edges and newly emerged fields for insect damage like grasshoppers and spray as needed to manage these late-summer pests.
- Do not harvest, graze, or clip alfalfa seedings in the fall to maximum the opportunity for young plants to accumulate reserves for good winter survival. Excessive fall growth will not smother alfalfa.



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