

## Summer & Fall Alfalfa Seeding Recommendations for Successful Establishment

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Summer and fall seeding is an excellent way to re-establish stands and is actually the preferred time of year to seed in many regions. The decision to summer seed should be based on weather conditions (temperature), available soil moisture, and projected forage needs (importance of having a fully productive alfalfa stand available next spring vs. direct seeding).

### Summer Seeding Advantages

- Allows seeding of alfalfa following the summer harvest of small grains, vegetable crops or sweet corn.
- Optimizes yield potential for following year (no two-month harvest delay by seeding in spring).
- Early season diseases usually are not present.
- Weeds are primarily controlled by pre-plant cultivation or burn down, reducing the need for herbicides.
- More time available for proper seedbed preparation.

### Summer Seeding Disadvantages

- Shortage of moisture and/or extremely high temperatures may result in reduced stand density.
- If too dry at seeding time, seed may germinate too late to get enough growth to survive the winter.
- Frost damage may occur if recommended planting dates are not followed or early frost occurs.
- Herbicide carryover may be present and cause stand losses.

### Recommendations

If conditions are not right, do not plant alfalfa at this time. If the correct soil moisture, weather conditions, weed control and planting dates exist, establishing a highly productive alfalfa stand for the coming growing season is feasible. Consider the following ten guidelines for successful summer seeding:

#### 1. Moisture Conditions

- #1 factor in deciding to summer seed or not!
- Care must be taken not to seed too early, as an extended period of extremely hot, dry weather can kill new seedlings and substantially reduce the stand.
- Moisture must be available not only for germination, but to generate enough plant growth to build adequate carbohydrate reserves for winter survival.
- Dry soils make it difficult to prepare a firm seedbed and seeding depth may get too deep for successful emergence.
- Never seed into dry soil – a light rain ( $\frac{1}{2}$ " or less) can germinate seed, but the new seedling could die from drought in a matter of days if no more rain is received.

#### 2. Planting Dates

- Next to dry weather, planting too late is the next factor causing summer seeding failures.
- Actual dates will vary based on moisture availability and temperatures. At least 45 frost-free days of good growing conditions are necessary after seeding to build up adequate carbohydrate reserves for winter.
- Optimum planting dates are July 20 - August 20 in northern states (NY, MI, WI, MN), August 1 - September 1 in central states (PA, OH, IN, IL, IA, NE) and August 15 - September 15 in southern states (KY, MO, KS, OK).
- If the long range forecast is cooler or drier than normal conditions, plant earlier to give the plants time to develop.

### **3. Alfalfa Autotoxicity**

- Existing alfalfa plants produce a toxin that can reduce root development and survival of new seedlings.
- Extent of this problem increases with the age and density of the previous alfalfa stand.
- If reseeded into an existing alfalfa stand, a waiting period is needed to allow toxin to degrade out of root zone.
- Minimum waiting periods (waiting longer is always better):  
2+ year productive stand - rotate out for one growing season.  
2+ year winterkilled stand - destroy stand and crop residue, wait a minimum of 2-4 weeks before reseeding.
- When no-till seeding on erosion prone fields, seed three weeks after killing stand with an approved herbicide.
- Minimal risk exists if reseeding into a winterkilled stand less than two years old or one that never got fully established.

### **4. Seed Bed Preparation**

- Soil firmness is critical to ensure proper soil-to-seed contact and preserve soil moisture.
- Tillage is important to control perennial weeds, but do not dry out soil by over-tilling.
- Pack soil before and after planting for best results.
- Proper compaction at seeding is a key factor in successful establishment of alfalfa stands.
- If seeding into stubble, make sure there is good soil-to-seed contact and proper planting depth.

### **5. Seeding Methods**

- Seeders need press wheels or a cultipacker to optimize seed-to-soil contact for fast establishment.
- No-till seeders should have heavy down pressure, coulters ahead of disk openers and press wheels with a depth control mechanism.
- Air seeding is an ideal method for seeding alfalfa, but a proper seedbed is needed to be successful.

### **6. Planting Depth**

- Ideal planting is  $\frac{1}{4}$ " ; do not plant seed deeper than  $\frac{1}{2}$ ".
- If conditions are dry, do not seed (do not plant deeper than  $\frac{1}{2}$ " to "find moisture").
- Pre-pack soil firmly to control depth of seed, this is especially critical if soil is dry.

### **7. Fertility**

- Have soil tested and follow lime and plant food recommendations for P, K and S.
- Phosphorus is critical to proper root and seedling development. Potassium increases yields and stand persistence.
- Optimum pH levels are 6.7-7.5. Liming should be done 6-24 months prior to planting.
- Fields with high available nitrogen levels may delay or prevent the formation of nodules.
- 50 lbs of elemental sulfur before planting usually satisfies needs for life of the stand.

### **8. Weed Control**

- Weeds will rob new seedlings of critical moisture necessary for successful fall establishment.
- Do not use a cover crop for weed control in the summer as it out-competes alfalfa for critical moisture.
- Use a burn-down herbicide, such as Touchdown or Roundup, before planting to control perennial weeds and destroy any remaining vegetative growth from the previous crop.
- If weeds (like volunteer wheat) infest the newly seeded stand, contact a local agronomist for recommended post emerge herbicides. Clipping to reduce weed competition should be avoided with fall seedings.

## **9. Post-Seeding Considerations**

- Do not harvest the first fall unless there are no other feed options. Fall harvesting of summer seedings will likely result in stand losses over the first winter, reducing long-term productivity.
- If feed is needed, cut after plants have gone into dormancy and only if they reach 20-30% bloom.
- Do not fall graze with cattle or subject to machine traffic. New seedings are highly susceptible to crushing.
- If significant weed competition is present in the spring, use herbicides to clean up the field as early as possible.

## **10. Alfalfa Variety Selection Criteria**

- For best results plant varieties with high genetic potential for yield, quality, persistence and pest resistances needed for maximum long-term performance from the stand.
- Coated seed is ideal for summer/fall seeding as it creates a micro-environment for the seed. Its hydroscopic trait seeks available moisture speeding germination and establishment.
- Selecting for disease resistance (R, HR) to all major alfalfa diseases in the area is important. Seedling diseases are not as important for fall seeding, but major diseases are still key factors for persistence.
- In summer seedings, high quality seed paired with genetically strong seedling vigor and early growth characteristics are very important for quick stand establishment.
- Select for winterhardiness. Varieties with high resistance to root and crown diseases, excellent cold tolerance, and high persistence scores are the best choice for winter survival of the alfalfa stand.

Summer and fall seedings do have risks, but they offer many advantages for establishing strong, productive alfalfa stands to maximize alfalfa yields and profitability. By following these guidelines, one can manage and/or reduce risks and increase odds for success.