

Establishing Alfalfa

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Some farmers always get good alfalfa stands when seeding alfalfa and some are less successful. While there is no foolproof system for growing any crop, there are a few basic principles that are key to successful alfalfa establishment.

The first and largest reason for alfalfa stand failure is low soil pH. For 90 years, it has been known that alfalfa needs a soil pH of at least 6.8 for optimum growth but still only about half the recommended lime is applied. Alfalfa can be successfully established with a soil pH as low as 6.0 but it will be weak, weedy and low-yielding. If planning on establishing alfalfa in low soil pH fields (6.0 or above) where lime has not been applied in the past 6-12 months, consider applying lime now and seeding a grass for a year or seeding alfalfa now and applying a fine grind or more soluble form of lime.

The second most common reason for stand failure is poor seed-to-soil contact. For germination, the seed must be placed in the ground and the soil firmed around it allowing for water transfer from the soil to the seed. This need for firm soil is especially critical for alfalfa because the seed is planted so shallow (1/4-1/2" deep). Better establishment is often seen in the wheel tracks or headlands than across a field, indicating that soil was not pressed against the seed in other portions of the field, not establishing as well. Note that following the seeder with a drag (spike tooth harrow) loosens the soil; this practice is not recommended. The key to good seed-to-soil contact is to use a drill with properly adjusted press wheels or to use a cultipacker (a Brillion seeder has two cultipackers).

The third most common reason for stand failure is not controlling weed competition during the first 60 days after planting. During this establishment period, weeds (especially broadleaf weeds) can cause significant stand thinning. Weeds germinating after 60 days are likely filling holes in the field and will not cause stand thinning (though these weeds in the seeding year may be an indication of reduced alfalfa growth due to some nutrient deficiency or disease). Seeding the cover crop too thick can also result in thin alfalfa stands. Small grains should be seeded at 1-1 1/2 bu per acre. Heavier planting rates may give slightly higher grain yields (though not forage or straw yields) but will also likely reduce the alfalfa stand.

Historically, much alfalfa has been seeded with a cover crop to reduce erosion and early weed competition. Small grains were commonly used as the cover crop but are less common now since most farmers have less need for the straw. Many farmers with little soil erosion problems are going to direct seeding and then controlling weeds post emergence when needed.

Is there any difference in yield between drilled and broadcast alfalfa? There is no difference in yield if the drilled alfalfa is seeded with row spacing of 8" or less. If the drill has greater than 8" row spacing, it is recommended to seed at half rate in one direction and then seed at 60°-90° with the other half.

Some farmers are seeding with liquid fertilizer spreaders. This works well if seeding is followed by cultipacking. The only issue is to make sure the seed does not remain mixed with the fertilizer in the tank longer than necessary because fertilizer may reduce the viability of the *Rhizobium*. Seeding with granular fertilizer has been less common due to difficulty of mixing seed and the poor distribution patterns of granular applicators.

There are choices for farmers wanting to move away from small grains as a cover crop. When doing so, yield of forage in the seeding year becomes more important. Farmers can maximize seeding year yields by selecting alfalfa varieties carefully (some varieties yield 0.5-0.75 ton/ac more in the seeding year than others). It is also important to take first cutting early. If cut early enough, 2-3 more cuttings are likely in the seeding year.

One establishment option to consider is seeding alfalfa with oats as usual and then spraying the oats with Poast Plus or Raptor when oats are 6" tall. This system provides early weed and erosion control benefits of a cover crop while still giving the alfalfa yield of a direct seeding. Oats need not be premium varieties and should be seeded at the 1 bu/ac rate.

Another option is to consider seeding Italian (annual) ryegrass at 4-6 lb/ac with alfalfa. The ryegrass establishes rapidly and provides early erosion and weed control. It should be a type that does not head in the seeding year so only leaves will be produced. The leaves are high in quality and palatability, similar to alfalfa, and will contribute to yield throughout the seeding year. The ryegrass should be first cut 45 days after planting. ☘



Oats seeded with alfalfa and sprayed with Poast Plus