



## FORAGE SEEDING IS NOT ROCKET SCIENCE

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Good stand establishment is essential to optimizing the production potential of a forage stand. Thin stands encourage weed invasion, reduce yield, and may shorten the life of the stand.

Considering these negative consequences of poor stand establishment along with the high actual and opportunity costs associated with establishing a forage, it is important to minimize the chances of failure.

- Plan ahead. Numerous activities including weed control, adjusting soil pH and fertility, and selecting the best variety need to be completed well in advance of actually seeding a new stand. Remember that "the lack of planning is planning for failure."

- Seeding depth. In my opinion, the number one reason for poor forage stand establishment is seeding too deep. The agronomic rule-of-thumb is not to plant a seed deeper than five times its diameter. That means that most forages shouldn't be seeded deeper than 1/4 inch. Any deeper than 1/4 inch increases risks of poor emergence and a weak stand. A tilled seed-bed must be firm in order to have accurate seeding depth.

- Seed-to-soil contact. The forage seed must absorb approximately its own weight in water to germinate. From the seed's perspective, that's a

lot of water! Since the water must move from the soil into the seed, it is crucial that the seed be in contact with as much soil as possible. Poor seed-to-soil contact results in poor and sporadic germination which lowers the number of productive plants in the stand.

- Seeding rate. Forage seeding rate recommendations vary considerably between species. Reducing seeding rates below the recommended level is not the place to cut corners on forage establishment. Economic analyses show that less than 5 percent of the total cost associated with forage production is seed cost. Therefore, reducing seeding rates is truly being "penny wise and pound foolish."

- Seeding method. While there has been a lot of debate over which seeding method (for example, broadcast, fluid seeding or no-till) is the "best," it really isn't a big issue as long as each method is done correctly. This includes not seeding too deep, getting good seed-to-soil contact, and making sure enough seeds are being seeded per acre.

I realize these basic forage establishment principles seem rather routine, but every year there are unnecessary establishment failures. Many of these failures occur because one or more of the basic principles outlined above wasn't followed. This year, don't focus on the details of forage establishment so much that the basic principles are forgotten.

# Alfalfa Stubble Application May Boost Yields, Nutrient Values

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farm.

According to crop adviser Leland Miller of Advanced Agronomics, Quarryville, with the use of the nitrogen material stubble treatment, sometimes "you can get real response, but the quality falls on its face," Miller said. But the nitrogen, in a slow release form, forces the plant to "think" differently, altering its "expression."

Said Miller, "Stubble treatment — that is the key."

The spray-applied material also contains calcium and boron — two essential micronutrients that university crop experts have been saying are necessary to improving yields and nutrient value.

The material pays for itself, noted Reiff, who said that he only needs to get three bales more of alfalfa per acre. But the material can provide him with a big difference in terms of yield. And the response is quicker than is typical of alfalfa without the boost.

With cool, dry weather, in combination with the application, the roots of the plant have to keep reaching down in the ground for more nutrients. For the seven acres of alfalfa on which it was used, it helped that the plants were in their third season, coming after corn in the rotation.

Reiff plants a total of 15 acres at the farm. The soil is tested regularly.

Miller said his philosophy about soil management is to test the alfalfa more frequently than corn, at least every year. Corn can be tested every 3-4 years.

Reiff said that he doesn't put any extra fertilizer on the alfalfa ground, other than liquid manure from his dairy and swine operations. Each alfalfa field goes through about four cuttings a year and lasts about five years.

In the field, last fall cereal grains were no-tilled into the alfalfa for a first cutting. The cereal grains include oats, wheat, barley, and rye. In the second cutting, conducted in late June, mostly alfalfa was harvested.

With the use of the application, yields have increased at least 20 percent, according to Reiff.

This year the second cutting was harvested at a total of 3,300 pounds per acre. Under dry conditions because of a persistent drought, the alfalfa tested 17.2 percent protein, with a total digestible nutrient level of 61.1, relative feed value of 125, at 0.90 phosphorous.

While the amine nitrogen solution contains boron, producers have to be careful — more does not mean better. If you use too much boron, "you'll fry the crop, absolutely," said Miller.

The 9-0-0-7-1.5 solution is applied at two gallons per acre (including 7 percent calcium and 1.5 percent magnesium), with boron added separately, at 1 pint per acre (10 percent). Zinc is also applied at a pint per acre. Spraying is at a pressure of 40 pounds.

Another stubble treatment, of 15-0-0-3, is sometimes recommended by Miller. "Timing is key to this thing," he said, "which affects regrowth very early on." Alfalfa is a big user of potash, which is critical to yield.

Phosphorous levels also affect zinc usage, so it is important to consider proper nutrient balance in the formulations, according to Miller.

This past summer, at least in the early part of the season, growing conditions were good for alfalfa growers, because of the dry, cool weather. A wet year does not do alfalfa well, according to Miller. "You don't have the quality of forage," he said.

With improved alfalfa, Reiff said he has seen good responses in milk production and healthier animals. He found that out when, a few years ago, he lost half of his herd to health problems — mostly stray voltage which he was able to correct. With stray voltage, the animals simply stop drinking the water because they can detect a few volts of electricity. This directly affects milk production.

Reiff farms about 59 tillable acres and has a grade Holstein herd of 50 cows. He also maintains a 60-head farrow-to-finish barn. On the dairy, Reiff uses a TMR. Some of the finished hogs are sold at the New Holland Sales Stables and some are sent to AVA Pork.

Reiff belongs to the National Farmers Organization Dairy Cooperative.

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